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ABSTRACT

This study explored a number of facets of the problem of utilizing the judgment of teachers and other educational professionals in clarifying the training needs of teachers. Using lists of teaching abilities, topics in educational psychology, and statements of psychoeducational proposals regarding elements in the teaching-learning process, ratings were procured from urban, suburban, and rural teachers and from a group of teacher trainers or supervisors and a group of curriculum workers. Mean item values were determined for ratings by the groups according to the mastery or comprehension of the item, its importance or the need to study it, its application in teaching practice, and the extent to which it should be included in preservice and in-service training. The main findings are reported in numerous tables and a list of highlights. The appendixes list both the items and the mean item values derived from various criterial ratings by a number of response groups. A final section in the report analyzes the findings with special reference to their implications both for additionally needed research and for their applications in a practical program of curriculum building in teacher education. (MBM)

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ANALYSIS OF ITEMIZED JUDGMENTS CONCERNING THE ALLOCATION TO PRE-TEACHING AND IN-TEACHING TRAINING OF TEACHING COMPETENCIES, TOPICS IN EDUCATIONAL PSYCHOLOGY, AND PSYCHOEDUCATIONAL PROPOSALS

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Without benefit of tests of statistical significance it may be asserted with certainty that many persons are eager to cooperate in a search for ways of improving teaching through research in teacher education. This conclusion was confirmed for the writer in the willingness of the teachers enrolled in his courses at Lehman College and of other teachers approached by cooperating colleagues elsewhere to share their judgments concerning itemized lists of teaching competencies and psychoeducational ideas as elements to be included in teacher education programs.

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The opportunity to engage in such time-consuming research after many research-fallow years devoted to educational administration was first made possible several years ago by the thoughtful suggestion of the then Chancellor of The City University and later encouraged by the understanding of the present University Dean of Education and by the Chairman of the Department of Education at Lehman College.

A word of special gratitude is due the writer's wife, who in addition to displaying patience with the computer's demands on his time, contributed materially to the task of coping with the resultant mound of data.

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ANALYSIS OF ITEMIZED JUDGMENTS CONCERNING THE ALLOCATION TO PRE-TEACHING AND IN-TEACHING TRAINING OF TEACHING COMPETENCIES, TOPICS IN EDUCATIONAL PSYCHOLOGY, AND PSYCHOEDUCATIONAL PROPOSALS

SCOPE

At a time when simplistic proposals for the preparation of teachers abound, it requires a special brand of persistence to suggest an arduous and detailed analysis of functional teaching competencies as the basis for determining the elements that should go into a teacher preparation program.

In the view of the writer this task cannot be sidestepped. It needs to cover comprehensively all of the major components of the teaching-learning process. Moreover it needs to include the specific cognitive and affective as well as the skill-performance masteries related to each teaching competency.

Desirable though it may be, it is not necessary to await the full and definitive list of elements to be mastered for successful teaching before pressing forward on a clarification of the related problem of determining the staging of the effort to achieve selected masteries in terms of trainee readiness and the objective demands of the teaching task. In fact, the sharpening of one's thinking as to when illustrative masteries should be acquired may well help one's thinking as to which masteries are most worthy of emphasis. In any case the when problem is a bridge that will have to be crossed sooner or later.

Objective evidence as to which acquired competencies in teachers result in demonstrable changes in pupils is much to be desired, but hard-nosed proof in this matter is hard to come by, if not impossible to achieve. When objective criteria are set as the only or preferred ones, coverage of the field of competencies becomes so narrow as to result in a loss of essential validity. In this matter, as in the question as to when particular competencies should be stressed, major reliance still needs to be placed on the judgment of knowledgeable persons. However, the way in which these judgments are obtained and analyzed may make an important difference in the functional value of the resultant findings of judgment studies of this type.

Hence the present study, which focuses on an intensive analysis of responses to specific competency items representative of the components of a comprehensive model of the teaching-learning process, viewed mainly in psychoeducational terms.

PROCEDURE

While judgments of over one hundred educational professionals were involved with respect to certain aspects of the study, the report begins with the responses of ten teachers who had just completed a graduate course in Advanced Educational Psychology whose topics and assignments were built around the model of the teaching-learning process referred to. Three types of items were presented for judgment as follows:

Type A: 44 teaching abilities
Type B: 78 topics in educational psychology
Type C: 48 psychoeducational ideas in proposal form

The items are reproduced in the appendix.

The teachers were asked to rate each item with respect to four criterial questions. Two of the questions were central to the study as follows:

1. To what extent do you think pre-service training should contribute to the ability (topic, proposal) ?

2. To what extent do you think in-service training should contribute to the ability (topic, proposal) ?

Two related questions read as follows:

3. How thoroughly do you feel you have mastered the ability (topic, proposal) ?

4. To what extent did this course contribute to the ability (topic, proposal) ?

Ratings of 3, 2, or 1 were requested for each item according to the following key:

3: To a high or very great degree.
2: To an average or intermediate degree.
1: To a low or little degree.

The responses to each item on each criterial question were key punched and computer programs prepared to yield (1) mean item values on each criterion for each item; (2) means and standard deviations of distributions of mean item values; (3) correlations between paired sets of mean item values; (4) analysis of variance values indicating the relation between item ratings on the several criteria and subsets of items grouped according to designated characterisitics of the items; and (5) matrices showing the associated distribution of responses on paired criteria for the same item or on paired items for the same criterion.

Further details concerning the application of these procedures will be presented in conjunction with the expositinn of the purposes to which they were put, except for (5) above.

FINDINGS

1. How do the three types of items fare with respect to suggested emphasis on pre-teaching and in-teaching training?

Table 1 shows the means and the standard deviations of the distributions of the mean item values for each of the three types of items.

Table 1. Means and Standard Deviations of Mean Item Values for Each Type of Item as Recommended for Pre-Teaching and In-Teaching Emphasis

Type of Item	No.	Means			Standard Deviations	
		Pre-Teach.	In-Teach.	Ave.	Pre-Teach.	In-Teach.
Abilities	44	2.17	2.53	2.35	.23	.20
Topics	78	2.28	2.32	2.30	.27	.26
Proposals	48	2.19	2.35	2.27	.22	.31
All Items	170	2.23	2.38	2.31	.25	.28

It is evident from Table 1 that the in-teaching period is favored over the pre-teaching period on the average as regards the preferred time for receiving training in the items listed. This is particularly true with respect to the items designated as teaching abilities, and least so for the topics in Educational Psychology, in which case the modest difference of .04 was not significant to a .01 level. In the other three comparisons of differences between pre-teaching and in-teaching mean ratings, the statistical significance of the differences was better than .01 in terms of the t test.

Considering the pre-teaching means and the in-teaching means separately, the differences between means for pairs of types of items were significant to the .01 level for the following comparisons:

Pre-Teaching: None

In-Teaching: Teaching Abilities compared with Topics
Teaching Abilities compared with Proposals

The several differences and their respective levels of statistical significance are shown in Table 2.

Table 2. Differences and Their Levels of Statistical Significance As Between Pre-Teaching and In-Teaching Mean Ratings and As Between Paired Mean Ratings of the Several Item Types.

Comparison	N's	Difference	t	Chances of No Difference
Pre-Teach. vs. In-Teach.:				
Abilities	44,44	-.36	-7.759	Less than .01
Topics	78,78	-.04	-0.939	Less than .20
Proposals	48,48	-.16	-2.893	Less than .01
All Items	170,170	-.15	-5.345	Less than .01
Pre-Teaching:				
Abilities - Topics	44,78	-.11	-2.263	Less than .02
Abilities - Proposals	44,48	-.02	-0.429	Less than .40
Topics - Proposals	78,48	+.09	+1.935	Less than .05
In-Teaching:				
Abilities - Topics	44,78	+.20	+4.615	Less than .01
Abilities - Proposals	44,48	+.18	+3.249	Less than .01
Topics - Proposals	78, 48	-.03	-0.580	Less than .30

Aside from their statistical significance, the meaningfulness of the differences may be considered in terms of their relation to the variabilities of the pertinent distributions. Thus, the differ-

ence between the Pre-Teaching and the In-Teaching means for All Items is about half the average of the two standard deviations involved. Assuming normality of distribution, this would imply an overlapping of the two distributions such that approximately 70% of the In-Teaching mean item values would exceed the median of the Pre-Teaching mean item values. The corresponding percentage of overlapping for the Abilities items is about 95%, a striking disparity between the two distributions of mean item values.

The fact that the In-Teaching period is seen as the time for greater relative stress on the listed teaching abilities, topics in educational psychology, and psychoeducational proposals does not imply that the respondents would exclude the bulk, or even the majority, of these items from Pre-Teaching training. In fact, the number of items receiving a rating of less than 2.00 on the average was very small: only five of the 44 Abilities items; only nine of the 78 Topics items; and only three of the 48 Proposals items. It will be recalled that the designation of the 2 rating was, "To an average or intermediate" degree.

2. <u>What relation do Pre-Teaching and In-Teaching ratings have to one another and to ratings of Mastery?</u>

In addition to judging the desired contribution of Pre-Teaching and In-Teaching training with regard to the listed items, the respondents were asked to indicate their mastery of the several items, thereby yielding a third set of mean item values. The coefficients of correlation of the item value pairs for these three variables are presented in Table 3.

Table 3. Correlations of Pre-Teaching, In-Teaching, and Mastery Judgments for Each Type of Item and for All Items.

Correlation Between:	Abilities	Topics	Proposals	All Items
Pre-Teaching and In-Teaching	.119	-.001	.017	-.022
Pre-Teaching and Mastery	.321	.193	.289	.191
In-Teaching and Mastery	.596	.504	.720	.595

Two principal features of the results shown in Table 3 are especially noteworthy: (1) the virtual absence of correlation between the Pre-Teaching and the In-Teaching mean item values: and (2) the distinctly higher correlation with Mastery of the In-Teaching as against the Pre-Teaching ratings.

The first of the two findings suggests a tendency to balance two countervailing dispositions, one to believe that important items require stress both before and after teaching responsibility begins, the other to allocate training emphasis to one or the other period.

The second finding raises several questions. Do the lower Pre-Teaching coefficients imply lower reliability in judging desirable training emphasis in the case of the period that is less close to an awareness of present needs? Is there greater indecision as to whether teacher training should get involved in different types of foundational subject matter usually assigned to the Pre-Teaching period? Are the respondents implying that their Pre-Teaching training resulted in varying degrees of mastery for different kinds of items and for different persons?

Pieces that may help to solve these relationship puzzles may be found in the further report of findings, which include the results of intensive item analysis, the computation of additional correlation coefficients, and the application of an analysis of variance relating item characteristics to criterial ratings.

3. Which items are rated high in both Pre-Teaching and In-Teaching emphasis, which low in both, and which high in one and low in the other?

A breakdown of each of the correlations between Pre-Teaching and In-Teaching mean item values, visually indicated by the four quadrants of a scattergram, will serve to place each item with respect to others of its type under one of four headings as regards relative emphasis on Pre-Teaching and In-Teaching training:

1. High emphasis during both the Pre- and the In-Teaching periods;
2. Low emphasis during both the Pre- and the In-Teaching periods;
3. High emphasis during the Pre- and low emphasis during the In-Teaching period; and
4. Low emphasis during the Pre- and high emphasis during the In-Teaching period.

To convey a sense of the nature of these several categories of items a number of them have been selected for reproduction below. Items falling in the outer diagonal edges of each quadrant were selected for this purpose. The Pre-Teaching and the In-Teaching mean item value is noted next to the item number, as is the mean Mastery rating for the item.

Exhibit 1. Teaching Abilities: Illustrative High-High, Low-Low, High-Low, and Low-High Items As Regards Pre-Teaching Versus In-Teaching Emphasis.

High-High Items

10. (2.60, 2.90, 2.30) Be aware of sociocultural differences in needs and interests of pupils.

26. (2.50, 2.70, 2.30) Teach pupils to think both creatively and critically as well as systematically.

1. (2.40, 2.70, 2.40) Arouse initial pupil interest and attention through a variety of devices.

7. (2.40, 2.70, 2.40) Create a classroom climate conducive to keeping anxiety at a low level.

13. (2.40, 2.70, 2.60) Draw the pupil's attention to concepts and relationships in topics studied.

Low-Low Items

21 (2.00, 2.10, 2.10) Introduce problems or thought-provoking questions or tasks.

29. (2.00, 2.10, 1.30) Adjust teaching to the needs of physically handicapped children.

19. (1.80, 2.40, 2.10) Provide reinforcement by appropriately timed and distributed confirmation of correct responses.

23. (2.00, 2.20, 2.10) Help pupils develop inner mental structures for incorporating cognitive material.

40. (2.00, 2.20, 1.70) Engage in small scale or ancillary research on teaching problems.

High-Low Items

22. (2.30, 2.10, 1.80) Teach concepts by presenting and analyzing positive and negative instances.

43. (2.50, 2.40, 2.30) Derive satisfaction in developing content in lesson and unit planning.

32. (2.30, 2.30, 2.00) Adjust teaching to the needs of quiet, withdrawn children.

44. (2.50, 2.50, 2.40) Derive satisfaction in planning and executing instructional methods.

31. (2.20, 2.30, 2.00) Adjust teaching to the needs of intellectually superior children.

Low-High Items

37. (1.50, 2.60, 2.10) Involve parents cooperatively in their children's education.

38. (1.60, 2.70, 1.70) Work effectively with paraprofessionals and other teacher aides.

39. (1.80, 2.70, 1.90) Work with supervisors in educational evaluation and innovation.

27. (2.00, 2.80, 2.60) Manage classroom routines with easy efficiency.

20. (2.00, 2.60, 2.60) React to pupil responses in a manner to help him feel comfortable in making tries even when uncertain.

A number of points of interest may be noted in Exhibit 1, among which are the following:

The background, motivation, and anxiety level of the learner receive major attention in the High-High category.

The Low-Low category includes a cardinal principle of behavior modification theory and similarly of cognitive psychological theory. The research level of professional functioning is also included in this category, as are the needs of a special class of children.

Two other classes of special children fall in the High-Low group of items. Two of three items labelled "the ability to: derive satisfaction in" are also placed in this group, suggesting perhaps that the pressures of the teaching situation are felt to be inconsistent with training in "job satisfaction".

Incidentally, it should be noted that each item was prefaced by the expression, "the ability to". Instances where the "Low" value is higher than some "High" values are to be explained by

the fact that the High and Low designations were assigned to the Pre-Teaching and to the In-Teaching values on a relative basis independently of one another.

The items placed in the Low-High category, for the most part, seem to relate to activities that are more conveniently associated with an on-the-job situation.

As noted, the third value in the parentheses indicates the mean item value of the Mastery rating. When ranked, these values are somewhat more closely related to the In-Teaching values than to the Pre-Teaching means in each of the four quadrant groups.

We turn now to Exhibit 2, which lists topics in Educational Psychology falling in each of the four quadrants of a scattergram depicting the relation between Pre-Teaching and In-Teaching ratings by the ten teachers at the conclusion of a course in Advanced Educational Psychology in which some of the topics were studied.

The topics, as presented to the respondents and as shown in the appendix were grouped under thirteen headings reflecting in most instances the several components of the model of the teaching-learning process around which course discussions and a large home assignment were based. In the assignment the students were asked to illustrate the application of various psychological principles in the planning of a teaching unit. An eclectic position was presented in the course with principles and illustrations drawn from broad bands of ideology emanating from cognitive, psychodynamic, and behavioristic-connectionist psychology.

Exhibit 2. Topics in Educational Psychology: Illustrative High-High, Low-Low, High-Low, and Low-High Items As Regards Pre-Teaching Versus In-Teaching Emphasis.

High-High Items

4. (2.30, 2.80, 1.90) Secondary components (of the teaching-learning model): school, familial, and community surroundings.

49. (2.40, 2.80, 2.20) Individualizing learning: learning styles.

63. (2.40, 2.70, 2.40) The motivational sphere: attitudes and beliefs, interests and preferences, the value system, needs and motivational patterns.

64. (2.50, 2.60, 2.20) The social sphere and the self: socialization and conduct, self and ego system, interpersonal relations.

71. (2.70, 2.60, 1.90) Social-economic-cultural variations (among learners).

Low-Low Items

13. (1.80, 2.20, 2.30) Sharing the awareness of objectives with the learner.

24. (1.90, 1.70, 1.60) The teacher's role in research and development programs.

25. (1.70, 2.10, 1.90) The problem of logistics in distributing the resources for learning.

34. (1.90, 2.10, 1.50) Illustrative curriculum reformulations.

55. (1.90, 2.00, 1.60) Interaction between practice and research through mutual feedback.

High-Low Items

17. (2.60, 2.00, 2.10) Contributions from the psychology of development (to learner growth and motivation).

41. (2.50, 2.00, 2.10) Basic conditions of S-R learning and their implications for teaching: reinforcement and feedback.

57. (2.50, 1.90, 1.70) Chaining and verbal association: perceptual-motor and skill learning.

59. (2.50, 2.00, 2.20) Concept and principle learning.

62. (2.70, 2.10, 2.00) The cognitive sphere: sensory, perceptual, imaginal, ideational.

Low-High Items

16. (2.10, 2.70, 2.10) Forces for change in the learner: sources of motivational arousal and direction: plans and the structure of behavior.

20. (2.00, 2.70, 2.40) Analysis of teacher-pupil interaction.

26. (1.30, 2.50, 1.80) The organization of the school: the arrangement of learners and of teaching staff.

28. (1.80, 2.60, 2.20) Community influences on goals, pupils, teachers, curriculum, and teaching methods.

35. (2.10, 2.60, 2.20) Sources of curricular enrichment in and out of school.

The respondents' allocation of Pre-Teaching versus In-Teaching emphasis to topics in Educational Psychology confirms some of the conclusions that may be drawn from an inspection of allocations of teaching abilities. Several additional points of interest may be noted.

Motivation and individualization come through as strong Pre-Teaching and In-Teaching topics.

Research is again rated low and the study of curriculum reformulations , though acknowledgedly poorly mastered, are not seen as needing emphasis either in Pre-Teaching or In-Teaching training.

Items related to basic psychological principles are more likely to be found in the Pre-Teaching emphasis group rather than the In-Teaching category.

Again, matters relating to the ongoing life of the school receive In-Teaching rather than Pre-Teaching emphasis.

Psychoeducational Proposals

The third type of item consisted of brief statements in prescriptive form of ideas, gleaned from the psychological literature, that related to one or another phase of the teaching-learning process. Exhibit 3. samples these items with respect to relatively extreme instances falling in each of the aforementioned quadrants depicting the relationship between Pre-Teaching and In-Teaching training emphasis.

Exhibit 3 confirms and extends observations noted with respect to Exhibits 1 and 2. Learner motivation and cultural background are referred to in items in the High-High category. Two instructional items, one very broad and the other very specific, complete this group.

The Low-Low group are dominated by items on conditioning and a related connectionistic item. The inclusion of the basically important work of Erikson is possibly explained by the widespread unfamiliarity with his ideas on the part of teachers.

The items included in the High-Low grouping confirm the tendency to allocate basic psychological study, both behaviorist and cognitive, to the Pre-Teaching period.

The learner's aspirations and mental health needs, teacher roles, and relationships with parents are seen as warranting In-Teaching training, with less emphasis in the Pre-Teaching period.

The fact that trends depicted in Exhibit 3 tend to agree with those shown in Exhibits 1 and 2 suggests that the mean item values, though based on the judgments of a small number of respondents, can point to consistent trends.

Exhibit 3. Psychoeducational Proposals: Illustrative High-High, Low-Low, High-Low, and Low High Items As Regards Pre-Teaching Versus In-Teaching Emphasis.

High-High Items

6. (2.50, 2.80, 2.40) In planning the motivation of a learning unit, consider both the arousing of the interest and attention of the pupil and the channelling of the aroused "energy" toward the achievement of the specific learning objectives.

7. (2.40, 2.80, 2.40) Where motivation among pupils appears to be low, review the appropriateness of the curriculum and of teaching procedures to the developmental needs of the age group involved.

15. (2.40, 2.80, 2.40) Consider how the wider culture and the subculture to which the learner belongs may affect his learning.

30. (2.50, 2.60, 2.50) Viewing the teaching-learning process as a communication system, consider the role of the several instructional media, including live media such as the teacher, the pupils, and ancillary teaching personnel, that might serve as information or channelling sources.

41. (2.60, 2.50, 2.20) Once the common attributes of particulars have been identified in the attainment of a concept, test the learner's grasp of the concept by checking on his ability to determine its presence or absence in new instances presented to him.

Low-Low Items

9. (2.00, 1.90, 1.60) In assessing the contribution of the educational program to the basic personality development of pupils, apply criteria derived from Erikson's analysis of developmental "crises" encountered at the several stages of growth.

28. (2.00, 1.90, 1.70) In analyzing the acquisition of conditioned learning, note distinctions between instances where there are shifts from one S to another S with the R remaining the same and those where the shift is from one R to another R with the S remaining the same.

34. (2.10, 1.80, 2.20) Consider the effects of generalization in the institution of S-R connections and in their subsequent application to new situations.

37. (2.10, 1.70, 1.80) Consider the application of the principles of classical and instrumental conditioning to the motivational and emotional aspects of the teaching-learning process.

38. (2.00, 1.70, 1.70) In multiple discrimination learning, note the relative emphasis needed on differentiating between S's as against differentiating between R's.

High-Low Items

22. (2.40, 2.10, 1.80) In setting the outcomes to be achieved in the course of a specified learning unit, translate the stated objectives into psychological terms such as are stated in published taxonomies of cognitive and affective educational objectives.

25. (2.30, 2.00, 1.80) In teaching chains of S-R connections, consider ways of strengthening the several connections between the links, as well as the linkage of the individual stimuli with their respective responses.

42. (2.40, 2.30, 2.30) Employ advance organizers in aiding the learner to get set structurally for cognitive experience to come.

43. (2.60, 2.30, 2.30) Consider the part that language and labelling plays in comprehension and retention of knowledge, principles, mental processes, and skills.

46. (2.30, 2.10, 1.90) In learning by the problem-solving method, provide prompts where the learner would otherwise be blocked from the opportunity to proceed with needed practice in one or another phase of the total process.

Low-High Items

8. (2.10, 2.80, 2.30) In setting learning tasks and expected levels of achievement, take into account the learner's typical aspiration level, and how it fluctuates in the face of success and failure.

12. (2.00, 2.60, 2.30) Wherever appropriate, adapt the roles played by the teacher, both within and outside his specific instructional functions, to the wider objectives and circumstances of the teaching-learning enterprise.

14. (1.60, 2.70, 2.20) Review the emotional climate and the way the school is governed in the light of the mental health needs of the learners, both with a view toward minimizing maladjustive trends and maximizing productive, self-actualizing behavior.

16. (1.60, 2.80, 2.30) Note how the behavior and relationships of parents and other persons in the pupil's environment affect his learning, and take such measures related to the observed condition as may be appropriate and feasible.

21. (1.90, 2.90, 2.40) Within the framework of the proposed principles - and on occasion, aside from their dictates - experiment with variations in curriculum materials and approaches as a possible basis for the discovery of improvements and as a means for sustaining interest in teaching.

The technique of selecting and presenting sample items demonstrating relative emphasis on Pre-Teaching and In-Teaching training seems to have proved instructive, but it is imprecise. The matter of the relation between the characteristics of items and suggested training was pursued further in a manner to yield certain numerical comparisons.

4. How does the orientation of an item toward basic Psychology as distinguished from educational application affect the suggested placement of the item?

Employing an analogy with engineering or medicine, professions in which such basic disciplines as physics or physiology are considered to be indispensable components of pre-service training, many teacher educators decry the limited mastery of foundational psychology that is expected in the preparation of teachers. Teachers themselves have been known to acknowledge gaps in their psychological knowledge while at the same time favoring instruction or supervisory help oriented toward immediately practical teaching or management aids rather than "theoretical" foundations of educational practice.

In order to document preferences as to the placement of the more basic psychological ideas as contrasted with those deemed more relevant to applicational use, the 44 teaching abilities, 78 topics in Educational Psychology, and the 48 psychoeducational ideas were placed by the investigator in two categories: (1) those leaning toward fundamental principles, and (2) those bearing more directly on

educational practice. The number of items falling in each of the two categories for each item type is indicated in Table 4.

Table 4. Number of Items Stressing Foundational Psychology As Against Educational Application For Each Type of Item.

Type of Item	Psych. Found.	Educ. Applic.	Total
Teaching Abilities	8	36	44
Topics in Educ. Psych.	46	32	78
Psychoeduc. Proposals	30	18	48
All Items	84	86	170

By employing an analysis of variance computer program it was a simple matter to obtain for each criterion the means and standard deviations of the respective distribution of the mean ratings of the Psychological Foundations and the Educational Application items. Table 5 presents these mean and standard deviation values for each item type and criterion based on the responses of the pilot group of ten teachers.

Table 5. Means and Standard Deviations of the Distributions for Each Item Type and Criterion of Mean Item Values of Items Stressing Psychological Foundations and Those Stressing Educational Applications.

Type of Item	Psychological Foundations						Educational Applications					
	Pre-T.		In-T.		Mastery		Pre-T.		In-T.		Mastery	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Abilities	2.18	.22	2.44	.23	2.17	.23	2.17	.24	2.55	.19	2.23	.38
Topics	2.34	.21	2.27	.26	2.01	.20	2.18	.32	2.38	.26	2.11	.27
Proposals	2.19	.18	2.20	.27	2.05	.24	2.19	.29	2.60	.22	2.33	.23
All Items	2.27	.21	2.27	.27	2.04	.22	2.18	.28	2.50	.24	2.21	.32

Inspection of Table 5 reveals that, on the whole, Psychological Foundations items receive the same rating emphasis for the Pre-Teaching period as for the In-Teaching period, but that the Educational Applications items are considerably more heavily weighted for the In-Teaching period as against the Pre-Teaching period. The difference in this case is more than one standard deviation value. Thus, roughly 90 per cent of Education items may be expected to exceed the mean of the Psychology items as regards In-Teaching emphasis.

In the case of the Education items, the greater emphasis on the In-Teaching period applies to all three types of items.

In the case of the Psychology items, the lack of an overall difference between Pre-Teaching and In-Teaching emphasis does not apply to the Abilities items, where the In-Teaching period is stressed, nor to the Topics items, where the Pre-Teaching period is emphasized.

With respect to Mastery ratings the Educational Application items are judged to have been more fully mastered, on the average, than the Psychological Foundations items, with approximately two-thirds of the Education items exceeding the mean of the Psychology items. The difference in Mastery as between Psychology and Education items is greatest in the case of the Proposal items.

The variabilities of the item distributions, as measured by their standard deviations, are quite uniform except for notably high value for the Abilities distribution of Educational Applications items.

Comparisons between pairs of the various means depicted in Table 5 are presented as sets of differences in Tables 6, 7, and 8. Also shown in these tables are the numbers of items involved in each comparison and the statistical significance of the differences.

Table 6. Size and Statistical Significance of the Differences Between Psychological Foundations and Educational Applications Item Groupings for Each Type of Item and Rating Criterion

Comparison	N's	Difference	t	Chances of No Difference
Abilities:				
Pre-Teaching	8,36	.01	0.106	Less than .50
In-Teaching	8,36	-.11	-1.392	Less than .10
Mastery	8,36	-.10	-0.700	Less than .25
Topics:				
Pre-Teaching	46,32	.16	2.636	Less than .01
In-Teaching	46,32	-.11	-1.818	Less than .05
Mastery	46,32	-.10	-1.859	Less than .05
Proposals:				
Pre-Teaching	30,18	.00	0.000	.50
In-Teaching	30,18	-.40	-5.215	Less than .01
Mastery	30,18	-.28	-3.900	Less than .01
All Items:				
Pre-Teaching	84,86	.09	2.362	Less than .01
In-Teaching	84,86	-.23	-5.852	Less than .01
Mastery	84,86	-.17	-4.019	Less than .01

Table 6 indicates that, on the whole, the Psychological Foundations and the Educational Applications items are most sharply differentiated with respect to In-Teaching and Mastery ratings, in both cases showing greater emphasis upon Educational Applications. In the case of the Pre-Teaching criterion, the emphasis is upon Psychological Foundations, but less sharply so, and is due to a difference in the Topics ratings and not to any noticeable distinction with respect to the Abilities or the Proposals items.

The Pre-Teaching versus the In-Teaching comparisons of Table 7 supplement these findings.

Table 7. Size and Statistical Significance of Differences Between Pre-Teaching and In-Teaching Means for Each Item Type and for Psychological Foundations and Educational Applications Item Groupings

Comparison	N's	Difference	t	Chances of No Difference
	Psychological Foundations			
Abilities	8,8	-.26	-2.163	Less than .03
Topics	46,46	.07	1.408	Less than .10
Proposals	30,30	-.01	-0.166	Less than .05
All Items	84,84	.00	0.000	.50
	Educational Applications			
Abilities	36,36	-.38	-7.364	Less than .01
Topics	32,32	-.20	-2.706	Less than .01
Proposals	18,18	-.41	-4.654	Less than .01
All Items	86,86	-.32	-8.020	Less than .01

Further findings are presented in Table 8, which shows differences between means for the several item types.

Table 8. Size and Statistical Significance of the Differences Between Means of Item Types for Each Rating Criterion and for Psychological Foundations and Educational Applications Item Groupings

Comparison	N's	Difference	t	Chances of No Difference
Psychological Foundations				
Pre-Teaching:				
Abilities - Topics	8,46	-.16	-1.942	Less than .05
Abilities - Proposals	8,30	-.01	-0.130	Less than .10
Topics - Proposals	46,30	.15	3.185	Less than .01
In-Teaching:				
Abilities - Topics	8,46	.17	1.705	Less than .05
Abilities - Proposals	8,30	.24	2.243	Less than .02
Topics - Proposals	46,30	.07	1.118	Less than .20
Mastery:				
Abilities - Topics	8,46	.16	2.005	Less than .03
Abilities - Proposals	8,30	.12	1.236	Less than .20
Topics - Proposals	46,30	-.04	-0.011	Less than .50
Educational Applications				
Pre-Teaching:				
Abilities - Topics	36,32	-.01	-0.145	Less than .50
Abilities - Proposals	36,18	-.02	-0.264	Less than .50
Topics - Proposals	32,18	-.01	-0.107	Less than .50
In-Teaching:				
Abilities - Topics	36,32	.17	3.063	Less than .01
Abilities - Proposals	36,18	-.05	-0.850	Less than .20
Topics - Proposals	32,18	-.22	-2.977	Less than .01
Mastery:				
Abilities - Topics	36,32	.16	1.954	Less than .03
Abilities - Proposals	36,18	-.06	-0.605	Less than .30
Topics - Proposals	32,18	-.22	-2.861	Less than .01

It is evident from the findings presented in Tables 4 through 8 that the orientation of an item toward what has been termed Educational Applications as distinguished from Psychological Foundations affects suggested placement in the Pre-Teaching or In-Teaching period. There is a general tendency to favor Educational Applications, particularly for the In-Teaching period. However, Psychological Foundations items in the form of Topics are favored for the Pre-Teaching period, and a number of other distinctions have been presented. It is clear from these findings that specific as well as general trends need to be considered in the interpretation and application of the reported analysis of teachers' judgments as to training emphasis.

5. How does the school of psychological thought to which the item refers affect its suggested placement and its mastery?

In the light of current urgings that the solution to problems of education and teacher education lies in the adoption of one or another school of psychological thought, it was considered of interest to ascertain how the pilot group of teachers judged items drawn from the different schools. To that end, the 48 proposals, which had been based on ideas representing various points of view, were classified according to best fit in respect to their ~~source in~~ psychological source as follows:

1. General: 12 items
2. Behaviorist-connectionist: 10 items
3. Psychodynamic psychology: 16 items
4. Cognitive psychology: 10 items

Table 9 lists the means and standard deviations of the item ratings for each of the four categories.

Table 9. Means and Standard Deviations of the Distributions for Each Rating Criterion of the Mean Item Values Grouped According to School of Psychological Thought

Source	N	Means				Standard Deviations		
		Pre.-T.	In-T.	Diff.	Mastery	Pre.-T.	In-T.	Mastery
General	12	2.21	2.39	-.18	2.19	.17	.32	.21
Behav.-Conn.	10	2.14	2.17	-.03	2.04	.16	.36	.32
Psychodynamic	16	2.10	2.50	-.40	2.18	.26	.32	.30
Cognitive	10	2.36	2.25	.11	2.21	.19	.13	.26

Although interpretations from so small a sampling of persons and items must be considered highly tentative, several observations based on Table 9 may be noted, if only for the purpose of speculation.

Behaviorist-connectionist items are judged to be the least well mastered and receive relatively low ratings in Pre-Teaching and In-Teaching training emphasis. Psychodynamic items, dealing in good part with the learner and his needs, are strongly recommended for the In-Teaching training period. The Pre-Teaching period receives an edge in the case of the Cognitive items.

Except in the case of the Cognitive items, the reported standard deviations indicate less variability in the item ratings for the Pre-Teaching period than for the In-Teaching period. The difference in variability is greatest for the Behaviorist-Connectionist items. The size of the standard deviations may be used as an index of the degree of caution that should be employed in generalizing from the means.

In the sense of the dependability of results upon repeated sampling of similar groups of items, the measures of statistical significance of the obtained differences reported in Table 10 may add an interpretational dimension to the findings.

Table 10. Size and Statistical Significance of Differences Entailing Pre-Teaching and In-Teaching Ratings of Items Grouped According to School of Psychological Thought: Proposals

Comparison	N's	Difference	t	Chances of No Difference
Pre-Teach. - In-Teach.:				
General	12,12	-.18	-1.650	Less than .05
Behav.-Connect.	10,10	-.03	-0.228	Less than .50
Psychodynamic	16.16	-.40	-3.763	Less than .01
Cognitive	10,10	.11	1.436	Less than .10
Pre-Teaching:				
Beh.-Con. - Psychodyn.	10,16	.04	0.421	Less than .30
Beh.-Con.- Cognitive	10,10	-.22	-2.663	Less than .01
Psychodyn. - Cognitive	16,10	-.26	-2.634	Less than .01
In-Teaching:				
Beh.-Con. - Psychodyn.	10,16	-.33	-2.344	Less than .02
Beh.-Con. - Cognitive	10,10	-.08	-0.628	Less than .30
Psychodyn. - Cognitive	16,10	.25	2.260	Less than .02
Mastery:				
Beh.-Con. - Psychodyn.	10,16	-.14	-1.084	Less than .20
Beh.-Con. - Cognitive	10,10	-.17	-1.238	Less than .20
Psychodyn. - Cognitive	16.10	-.03	-0.251	Less than .50

The preference for the In-Teaching period over the Pre-Teaching period in the case of the Psychodynamic group of items is found to be statistically significant.

As regards the Pre-Teaching period, the Cognitive group of items prove preferred to a statistically significant degree over either the Behaviorist-Connectionist group or the Psychodynamic group.

Quite statistically significant, as regards the In-Teaching period is the greater preference of the Psychodynamic group of items over either the Behaviorist-Connectionist items or the Cognitive items, taken as groups.

With regard to Mastery, comparisons of item groups are less sharp in their statistical significance. However, Behaviorist-Connectionist items tend to be rated lower, on the average, than either the Psychodynamic or the Cognitive groups of items.

Thus, the findings reported in Tables 9 and 10 have depicted a number of respects in which the school of psychological thought to which items refer affect their suggested placement and mastery rating.

6. How does the aspect of the teaching-learning process to which the item refers affect its suggested placement and mastery?

Two sets of data are presented in the attempt to throw light on the question of the relation between suggested training emphasis and mastery on the one hand with the aspect of the learning process to which the several items refer. The first divides the Proposal items into three broad groups according to their respective reference to

(1) learners; (2) curriculum selection, sequencing, and organization; and (3) instructional or learning procedures. The second set of data includes the Abilities and Topics items as well as the Proposals items, and further, goes into a finer classification of the entire set of 170 items under ten headings as listed in Table 13. Any conclusions from the data presented in this section will necessarily be subject to the adequacy of item sampling under the several headings and to the the meanings ascribed to each.

Table 11 presents the means and standrad deviations of the rating distributions according to the Pre-Teaching, In-Teaching, and Mastery criteria for each of the three broad subdivisions under which the Proposals items were classified.

Table 11. Means and Standard Deviations of the Distributions for Each Rating Criterion of the Mean Item Values Grouped According to Three Broad Subdivisions of the Teaching-Learning Process: Proposals

Aspect	N	Means				Standard Deviations		
		Pre-T.	In-T.	Diff.	Mastery	Pre-T.	In-T.	Mastery
Learners	16	2.09	2.60	-.51	2.23	.26	.23	.25
Curriculum	16	2.21	2.29	-.08	2.13	.17	.25	.29
Procedures	16	2.27	2.17	.10	2.13	.20	.31	.28

The preeminent place assigned the items pertaining to Learners during the In-Teaching training period is the most striking finding indicated in Table 11. Differences confined to the other two categories, namely Curriculum and Procedures, while existent, are not as sharp, asthe entries in Table 12 will show in terms of the size and statistical significance of the obtained differences.

Table 12. Size and Statistical Significance of Differences Entailing Pre-Teaching, In-Teaching, and Mastery Ratings of Items Grouped According to Three Broad Aspects of the Teaching-Learning Process

Comparison	N's	Difference	t	Chances of No Difference
Pre-Teach. - In-Teach.:				
Learners	16,16	-.51	-5.698	Less than .01
Curriculum	16,16	-.08	-1.027	Less than .20
Procedures	16,16	.10	1.051	Less than .20
Pre-Teaching:				
Learners - Curriculum	16,16	-.12	-1.498	Less than .10
Learners - Procedures	16,16	-.18	-2.130	Less than .02
Curriculum-Procedures	16,16	-.06	-.0887	Less than .20
In-Teaching:				
Learners - Curriculum	16,16	.31	3.539	Less than .01
Learners - Procedures	16.16	.43	4.322	Less than .01
Curriculum-Procedures	16,16	.12	1.1684	Less than .20
Mastery:				
Learners - Curriculum	16,16	.10	1.013	Less than .20
Learners - Procedures	16,16	.10	1.033	Less than .20
Curriculum-Procedures	16,16	.00	0.000	.50

In summarizing Tables 11 and 12 one might say that, were the ratings to be used as a basis for allocating items to Pre-Teaching versus In-Teaching training, items relative to Learners would tend to be placed in the In-Teaching period, while those pertaining either to Curriculum or Procedures in the Pre-Teaching period. Such a conclusion, of course, would imply that the problem of training allocation is far simpler than it really is.

One of the complexities of the problem of allocating items to training periods relates to the danger of generalized interpretations based on samplings of particular items. Only an inspection of the items assigned to each of the broad categories can convey the extent to which the groupings represent internally consistent meaning and conversely, the extent to which conclusions may be drawn only about individual items. The Appendix listing of the Proposals items along with the others will enable the reader to draw his own conclusion in this regard.

To obtain whatever advantage may be gained from a massing of individual item results, a finer classification of all 170 items according to aspect of the teaching-learning process to which they referred was made. Table 13 shows the number of items that fell under each of the ten headings used in this classification separately for each of the three item types and for all the items combined.

Table 13. Number of Items Under Each Item Type Falling Within Each of Ten Detailed Aspects of the Teaching-Learning Process

Aspect	Number of Items			
	Abilities	Topics	Proposals	All Items
1. General Teach.-Learn. Model	1	15	1	17
2. Educ. Objectives	4	11	3	18
3. Learner Devel. & Readiness	4	9	8*	21
4. Learner Motiv.:Psychodynamics	2	5	4	11
5. Teacher-Pup. Roles & Interact.	8	6	3	17
6. Curric. Select. & Organization	4	9	4	17
7. Gen. Teach.-Learn. Procedures	3	8	6	17
8. Contrib.: Cognitive Psych.	7	3	7	17
9. Contrib.: Behav.-Conn. Psych.	1	5	11	17
10. Indiv. Diff. & Exceptionality	10	7	1	18
Total	44	78	48	170

* Two of these items were later reclassified under Aspect 4.

Although the inspection of the means of item group ratings based on single item types revealed a high degree of consistency, the Aspect categories for item types taken one at a time yielded in many instances what seemed to be too small a number of items to provide dependable results. Hence only the findings based on the combination of the three types are reported in Table 14, which lists the means and standard deviations of the distributions for each rating criterion of the mean item values of all items, grouped according to the ten-category classification of items previously described.

Table 14. Means and Standard Deviations of the Distributions for Each Rating Criterion of the Mean Item Values for All Items grouped According to Ten Detailed Aspects of the Teaching-Learning Process

Aspect	N	Means				Standard Deviations		
		Pre-T.	In-T.	Diff.	Mastery	Pre-T.	In-T.	Mastery
1. Gen. T-L Model	17	2.25	2.31	-.06	1.99	.40	.23	.41
2. Educ. Objectives	18	2.14	2.40	-.26	2.05	.24	.24	.43
3. Learner Devel.	21	2.26	2.49	-.23	2.21	.19	.28	.31
4. Learner Motiv.	11	2.21	2.57	-.36	2.19	.26	.21	.25
5. Roles & Interact.	17	1.99	2.58	-.59	2.29	.26	.24	.36
6. Cur. Sel. & Org.	17	2.23	2.39	-.16	2.22	.18	.22	.30
7. Gen. Teach. Proc.	17	2.32	2.31	.01	2.19	.19	.28	.36
8. Cognitive Contr.	17	2.34	2.29	.05	2.21	.23	.24	.27
9. Beh.-Conn. Contr.	17	2.18	2.08	.10	1.99	.19	.31	.23
10. Ind. Differences	18	2.32	2.43	-.11	1.92	.22	.22	.36
Total	170	2.23	2.38	-.15	2.12	.25	.28	.29

The statistiscal significance of the differences between the Pre-Teaching and In-Teaching means shown in Table 14 are listed in Table 15.

Table 15. Size and Statistical Significance of the Differences Between Pre-Teaching and In-Teaching Ratings for All Items Grouped According to Ten Detailed Aspects of the Teaching-Learning Process

Aspect	N's	Difference	t	Chances of No Difference
1. Gen. T-L Model	17.17	-.06	-0.520	Less than .25
2. Educ. Objectives	18,18	-.26	-3.167	Less than .01
3. Learner Devel.	21,21	-.23	-3.042	Less than .01
4. Learner Motiv.	11,11	-.36	-3.412	Less than .01
5. Roles & Interact.	17,17	-.59	-6.682	Less than .01
6. Cur. Sel. & Org.	17,17	-.16	-2.253	Less than .02
7. Gen Teach. Proc.	17,17	.01	0.118	Less than .50
8. Cognitive Contr.	17,17	.05	0.602	Less than .30
9. Beh.-Conn. Contr.	17,17	.10	1.101	Less than .20
10. Ind. Differences	18,18	-.11	-1.461	Less than .10

The most striking finding noted in Tables 14 and 15 is the size of the Pre-Teaching versus In-Teaching difference for items in the category of Roles and Interaction. In the case of this set of items the Pre-Teaching mean is the lowest for any category while the In-Teaching mean is the highest. The frequency of role and interpersonal relationship items in the illustrative lists of Low-High items in Exhibits 1, 2, and 3 confirms this finding in qualitative form.

Two categories of items affecting learners are also strong as regards preference for In-Teaching training, as is the one pertaining to Educational Objectives. The basic psychological items tend to receive slightly more Pre-Teaching emphasis.

Mastery is considered weakest, on the average, with respect to general items relative to the teaching-learning model, to educational objectives, to behaviorist-connectionist contributions, and to individual differences and exceptionality.

7. How does the technical difficulty of the item affect its suggested placement?

In Table 3, self-reported mastery of items was seen to have a moderate correlation with In-Teaching ratings and only a slight correlation with Pre-Teaching ratings. It may be noted that an item may be poorly mastered for one or more of a number of reasons. Thus, it may be considered unimportant and hence unworthy of study. Or, despite acknowledgement of importance, it may have been neglected in previous training or experience. Or, it may simply be difficult to acquire because of inherent technicality or abstractness.

To learn more about the operation of the last named factor, the Proposals items were placed in three categories according to their technical difficulty as judged by the investigator. The judged difficulty of ideas as well as terms included in the item entered into the decision as to the item's classification.

Table 16 gives the means and standard deviations of the distributions of mean item values for each rating criterion and each category of technicality.

Table 16. Means and Standard Deviations of Distributions of Mean Item Values for Each Rating Criterion and Each Category of Item Technicality: Proposals

Technicality	N	Means				Standard Deviations		
		Pre-T.	In-T.	Diff.	Mastery	Pre-T.	In-T.	Mastery
Low	16	2.15	2.49	-.34	2.24	.24	.24	.20
Intermediate	16	2.26	2.45	-.19	2.29	.25	.31	.23
High	16	2.16	2.11	.05	1.94	.15	.26	.25
Total	48	2.19	2.35	-.16	2.16	.22	.31	.27

Table 16 reveals that the technicality of an item has a bearing on whether an item is given greater or lesser emphasis as between the Pre-Teaching and the In-Teaching period. The less technical items clearly receive In-Teaching preference. There is a slight tendency to place the most technical items in the Pre-Teaching period. The statistical significance of the differences between the two periods is shown in Table 17.

Table 17. Size and Statistical Significance of the Differences Between Pre-Teaching and In-Teaching Ratings of Items Grouped According to Their Technicality: Proposals

Comparison	N's	Difference	t	Chances of No Difference
Technicality:				
Low	16,16	-.34	-3.886	Less than .01
Intermediate	16,16	-.19	-1.850	Less than .05
High	16,16	.05	0.646	Less than .30
Total	48,48	-.16	-2.893	Less than .01

Table 18 indicates the size and statistical significance of the differences in the mean values of Low versus High Technicality items for each of the three rating criteria applied to Proposals items.

Table 18. Size and Statistical Significance of the Differences Between Low and High Technicality Ratings for Pre-Teaching, In-Teaching, and Mastery Rating Criteria: Proposals

Comparison	N's	Difference	t	Chances of No Difference
Criterion:				
Pre-Teaching	16,16	-.01	-0.137	Less than .50
In-Teaching	16,16	.38	4.167	Less than .01
Mastery	16,16	.28	3.636	Less than .01

Tables 17 and 18 elaborate on the information contained in Table 16. The extremes of Techicality do not yield a significant difference in Pre-Teaching ratings. Mastery, like the In-Teaching criterion shows a marked relationship with Technicality.

A finding of irregularity in trend with regard to the Intermediate Technicality ratings suggests that items so placed tended to evoke additional considerations in the mind of the investigator as he judged the technicality of items. A later presentation of interrelationships among item characteristics may throw some light on this matter. That the tendency to show little differentiation between the Low and the Intermediate Technicality items is not simply a matter of chance is demonstrated by the fact other groups in related studies followed the same pattern in applying criteria of the Importance, the Application, and the Comprehensibility of items. Among the groups studied was a composit group of 78 urban, suburban, and rural teachers.

8. How does interaction among the several item characteristics affect the relation of individual characteristics to the suggested placement of items?

The reported relation between Low Technicality of items and In-Teaching emphasis raises a further question. When teachers tend to choose the less technical items for placement in the In-Teaching training period, is it because of the lesser technicality of the items, per se, or because items preferred, perhaps, for other reasons happen to be less technical? An examination of the relationships among a number of the item characteristics may bring us closer to an answer.

Table 19 shows the relation between the categories of Technicality under which the Proposal items were placed and those of several other item characteristics.

The table shows, for example, that the Foundational Psychology items tended to fall most frequently in the High Technicality category, while the Educational Applications items are to be found in the two less technical groups. Had there been no association, one might have concluded that Technicality, rather than the other item characteristic, is a major determinant of In-Teaching versus Pre-Teaching placement. Now one has to keep open the possibility that it is the Foundational versus Applicational distinction that is affecting the result.

The potential role of other characteristics can be traced by consulting the other segments of Table 19. Thus, the General category under School of Psychology tends to be associated with Low Technicality while the Behaviorist-Connectionist School is related to High Technicality. Other noteworthy observations include the low frequency with which items referring to Learners fall in the

Table 19. For Each Category of Technicality the Number of Items Falling in Each Category of Other Item Characteristics: Proposals

Category	Technicality: Low	Intermediate	High	Total
Foundational Psych. vs. Educ. Applications				
Foundational Psychology	9	7	14	30
Educational Applications	7	9	2	18
School of Psychology				
General	8	2	2	12
Behaviorist-Connectionist	1	2	7	10
Psychodynamic	5	7	4	16
Cognitive	2	5	3	10
Quadrant of Scattergram of Pre-Teaching-In-Teaching Placement				
High-High	3	7	3	13
High-Low	4	4	5	13
Low-High	7	3	0	10
Low-Low	2	2	8	12
General Aspects of the Teaching-Learning Process				
Learners	7	7	2	16
Curriculum	5	3	8	16
Procedures	4	6	6	16
Specific Aspects of the Teaching-Learning Process				
General Teaching-Learning Model: Feedback	0	0	1	1
Educational Objectives	1	0	2	3
Learner Development & Readiness	2	1	3	6
Learner Morivation: Psychodynamics	2	4	0	6
Teacher-Pupil Roles and Interaction	1	2	0	3
Curriculum Selection and Organization	2	1	1	4
General Teaching-Learning Procedures	4	1	1	6
Contributions: Cognitive Psychology	1	4	2	7
Contr.: Behaviorist-Connectionist Psych.	3	2	6	11
Individual Differences & Exceptionality	0	1	0	1
All Items				
Total	16	16	16	48

High Technicality group and the high incidence of Curriculum items in that category. The fact that ten groups are employed under the Specific Aspects of the Teaching-Learning Process results in so few items in any one group as to make the drawing of conclusions hazardous.

Tenuous as conclusions from any part of Table 19 may be, the tracing of the thread of the relation between Technicality and the other item characteristics serves to capture a sense of the complex manner in which an items characteristics may operate in affecting judgments regarding the item. Results such as these, particularly when obtained on a larger scale, may serve to generate hypotheses, both explanatory and constructive, relative to attitudes toward the training elements, whether in the form of proposals, topics, or competencies.

Besides relationships with Technicality, a number of other item characteristics interrelationships may be noted. Thus, Table 20 indicates how items in each of the Pre-Teaching vs. In-Teaching quadrant positions were classified with respect to four other item characteristics.

Among the findings of Table 20 is the interesting observation that all 12 of the Proposals items placed in the Low-Low category were of the Foundational Psychology type. All of the School of Psychology groups are included in both theHigh-High and the Low-Low classes. Items dealing with Learners are again well represented in High In-Teaching placement. The Behaviorist-Connectionist items contribute heavily to the Low-Low class.

Table 20. For Each Quadrant of the Pre-Teaching Versus In-Teaching Scattergram the Number of Items Falling in Each Category of Other Item Characteristics: Proposals

Category	Pre-Teaching vs. In-Teaching: High-High	High-Low	Low-High	Low-Low	Total
Foundational Psychology vs. Educ. Applications					
Foundational Psychology	6	9	3	12	30
Educational Applications	6	5	7	0	18
School of Psychology					
General	4	3	3	2	12
Behaviorist-Connectionist	3	1	1	5	10
Psychodynamic	4	3	6	3	16
Cognitive	2	6	0	2	10
General Aspects of the Teaching-Learning Process					
Learners	5	0	9	2	16
Curriculum	5	6	1	4	16
Procedures	3	7	0	6	16
Specific Aspects of the Teaching-Learning Process					
Gen. Teaching-Learning Model	1	0	0	0	1
Educational Objectives	0	2	1	0	3
Learner Development & Readiness	1	1	2	2	6
Learner Motivation: Psychodynamics	3	0	3	0	6
Teacher-Pupil Roles and Interaction	0	0	3	0	3
Curriculum Selection and Organization	1	1	1	1	4
General Teaching-Learning Procedures	2	4	0	0	6
Contributions: Cognitive Psychology	2	4	0	1	7
Contributions: Behav.-Conn. Psych.	2	2	0	7	11
Individual Diffs. & Exceptionalities	1	0	0	0	1
All Items					
Total	13	13	10	12	48

Table 21 shows the distribution of the Foundational Psychology and the Educational Applications items in relation to their grouping in terms of other item characteristics.

Table 21. For Psychological Foundations and Educational Applications Items the Number of Items Falling in Each Category of Other Characteristics: Proposals

Category	Psych. Found.	Educ. Applic.	Total
School of Psychology			
General	8	4	12
Behaviorist-Connectionist	8	2	10
Psychodynamic	7	9	16
Cognitive	7	3	10
General Aspects of the Teaching-Learning Process			
Learners	7	9	16
Curriculum	12	4	16
Procedures	11	5	16
Specific Aspects of the Teaching-Learning Process			
General Teaching-Learning Model	0	1	1
Educational Objectives	1	2	3
Learner Development & Readiness	4	2	6
Learner Motivation: Psychodynamics	3	3	6
Teacher-Pupil Roles and Interaction	0	3	3
Curriculum Selection & Organization	3	1	4
General Teaching-Learning Procedures	5	1	6
Contributions: Cognitive Psychology	4	3	7
Contributions: Behav.-Conn. Psych.	10	1	11
Individual Diffs. & Exceptionalities	0	1	1
All Items			
Total	30	18	48

Table 21 reveals that the Psychological Foundations items are drawn from all the schools of Psychology in essentially chance proportions except for the Psychodynamic category, which contributes more than chance expectancy to the Educational Applications items.

Of the General Aspects of the Teaching-Learning Process, the Learners category contributes relatively strongly to Educational Applications.

The most notable observation regarding the Specific Aspects of the Teaching-Learning Process is the heavy proportion of Behaviorist-Connectionist Psychology items in the Psychological Foundations group.

Tables 22 and 23 conclude the presentation of data concerning the interrelations among the item characteristics. Table 22 relates categories of School of Psychology to both General and Specific Aspects of the Teaching-Learning Process. Table 23 shows the relation between the General and the Specific Aspects.

Table 22. For Each Category of School of Psychology the Number of Items Falling in Each Category of General and of Specific Aspects of the Teaching-Learning Process: Proposals

Category	School of Psychology				
	Gen.	Beh.-C.	Ps'dy.	Cog.	Total
General Aspects					
Learners	3	1	12	0	16
Curriculum	5	6	1	4	16
Procedures	4	3	3	6	16
Specific Aspects					
Gen. Teaching-Learning Model	0	1	0	0	1
Educational Objectives	1	0	2	0	3
Learner Development and Readiness	2	0	4	0	6
Learner Motivation: Psychodynamics	0	0	6	0	6
Teacher-Pupil Roles and Interaction	0	1	2	0	3
Curriculum Selection and Organization	2	0	0	2	4
General Teaching-Learning Procedures	4	0	0	2	6
Contributions: Cognitive Psychology	0	0	1	6	7
Contributions: Behav.-Conn. Psych.	2	8	1	0	11
Individual Diffs & Exceptionalities	1	0	0	0	1
All Items					
Total	12	10	16	10	48

Table 23. For Each General Aspect of the Teaching-Learning Process the Number of Items in Each Specific Aspect of the Teaching Learning Process: Proposals

Category	General Aspect			
	Learners	Curric.	Proc.	Total
Specific Aspects				
General Teaching-Learning Model	0	1	0	1
Educational Objectives	1	2	0	3
Learner Development and Readiness	5	0	1	6
Learner Motivation: Psychodynamics	6	0	0	6
Teacher-Pupil Roles and Interaction	3	0	0	3
Curriculum Selection and Organization	0	4	0	4
General Teaching-Learning Procedures	1	3	2	6
Contributions: Cognitive Psychology	0	1	6	7
Contributions: Behav.-Conn. Psych.	0	5	6	11
Individual Diffs. & Exceptionalities	0	0	1	1
Total	16	16	16	48

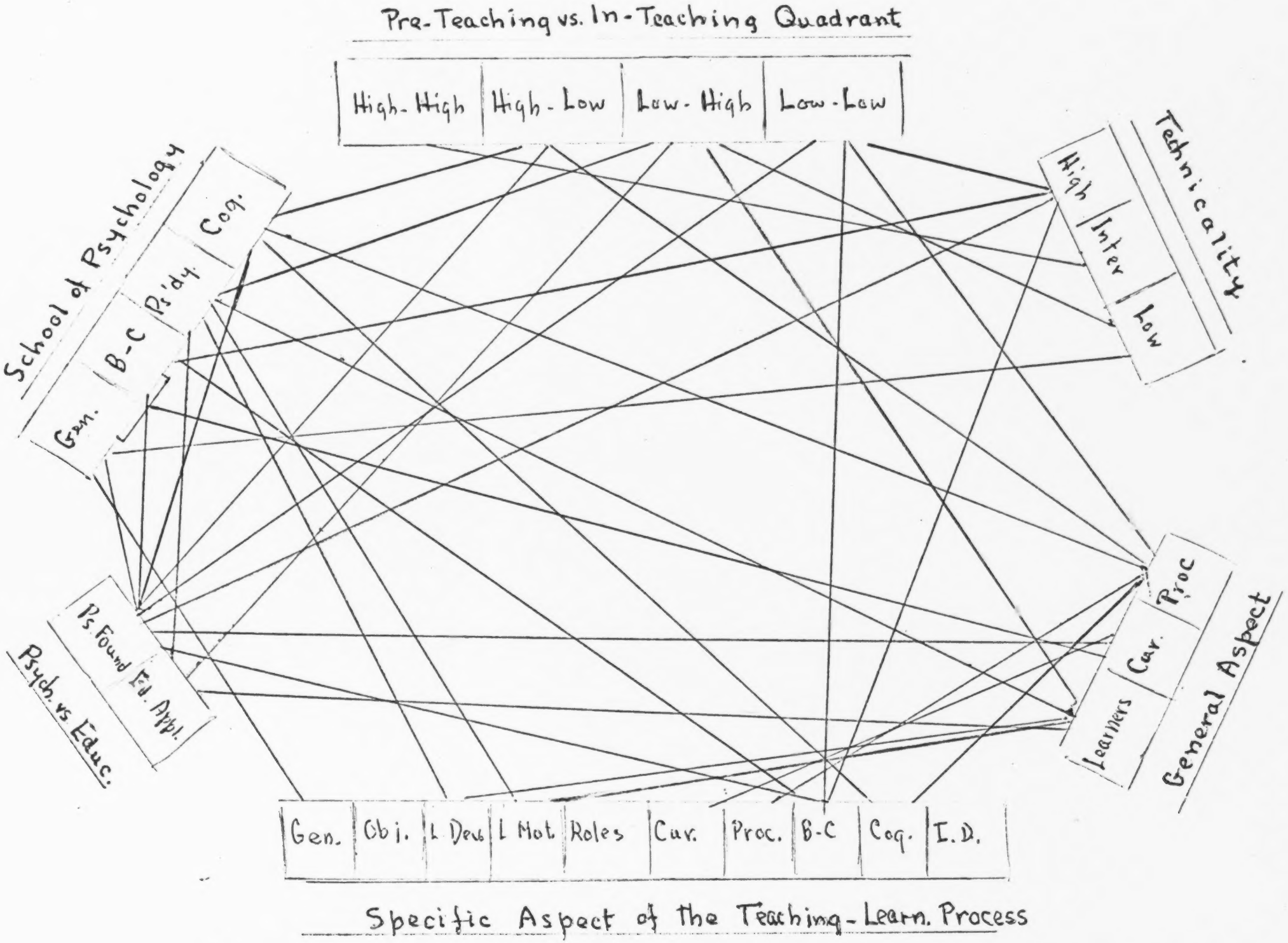
That the interrelations among item characteristics and their relation to relative emphasis on Pre-Teaching versus In-Teaching training are both complex is evident from Tables 19 through 23, and also from Exhibit 4, which shows the positive associations graphically.

As one examines the overall picture of interconnections, it becomes clear that certain simplifying threads of relationship may be discerned. Thus, the Low-Low quadrant is seen to pick up Psychological Foundations items, items High in Technicality, Behaviorist-Connectionist Aspects of the Teaching-Learning Process, and Procedure Aspects. The High Technicality and the Behaviorist-Connectionist Aspects are themselves connected. Hence, a fairly consistent sub-pattern of relationship emerges.

This means, of course, that the categories involved have a number of items in common. Causal or interactional relations can only be speculated about. Thus, one may choose to think that the Technicality characteristic may have a causal relation to the Low placement ratings in both Pre-Teaching and In-Teaching training. On the other hand, the relation between Technicality and the Behaviorist-Connectionist source of items may be attributed to what one might term definitional association resulting from the judges' belief that material from this school of Psychology tends to be high in technicality.

That High-High placement items tend to be of Intermediate Technicality and are seen to be quite evenly spread over the categories of the various item characteristics suggests that the judges

Exhibit 4. Interrelations Among Item Characteristics and Pre-Teaching vs. In-Teaching Quadrant



are responsive to multiple factors embedded in the item characteristics. Thus the basis for relative rejection is more sharply focused that for positive emphasis.

The distinction between the High-Low and the Low-High categories follows a pattern of a sort. Earlier training tends to be suggested for Psychological Foundations items, with Cognitive items, and with Procedure Aspect items. Recommendation for later, In-Teaching training tend to be made for Educational Applications items, Psychodynamic items, items about Learners, and Low Technicality items.

If the findings had to be summarized in a single statement, one might say that the teacher respondents would place the hard-nosed psychological study primarily in the Pre-Teaching period and the more humanized material in the In-Teaching period. However, the distinction should not be overdrawn; nor should the findings with the present sampling of persons and items be over-generalized. Further, the practical question as to how the judgments of the teachers can be best utilized in the decision making process as it affects teacher education needs still to be considered.

9. What cross-group relations hold between Mastery, Pre-Teaching, and In-Teaching Ratings and ratings of the Comprehension, Importance, and Application of the Proposals items?

Without prejudice as to pragmatic conclusions to be drawn from the findings reported, the internal consistency and compatibility of these findings suggest fairly good dependability despite the small size of the present group. To check further on dependability and to add relational information that may prove help-

ful interpretively, present group judgments were correlated with a number of criterial ratings made by previous groups.

Table 24 indicates moderately high correlations between item Mastery ratings of the present group and comparative item Comprehension ratings of three previous groupings of respondents consisting of urban, suburban, and rural teachers respectively. The correlations are based on the 48 Proposals items, as a unit and subdivided into 30 Psychological Foundations items and 18 Educational Applications items. It will be noted that the resultant coefficients tend to be somewhat higher when groups either of persons or of items are combined.

Table 24. Coefficients of Correlation Between Item Mastery Ratings of the Present Teacher Group with Item Comprehension Ratings of Previous Teacher Groups: Proposals

Previous Group	N	Coefficient of Correlation		
		Psych. Items	Educ. Items	All Items
Urban Teachers	37	.599	.591	.688
Suburban Teachers	23	.596	.603	.695
Rural Teachers	18	.641	.543	.692
Combined Group	78	.643	.617	.743

The relatively high correlations of Table 24 are all the more indicative of dependability of Mastery ratings in view of certain differences between the present group and the previous groups. For one thing, the present group responded to the inquiry forms at the conclusion of a course in Advanced Educational Psychology whereas members of the previous groups had either not taken the course or were given the instrument at the outset of the course. Moreover, the present group had a considerably larger proportion of secondary school teachers than did the previous groups, the first

two of which were confined almost entirely to elementary school teachers. Further, the criterial question was worded somewhat differently, referring in one case to Mastery, and in the other to Comprehension.

Despite these differences, the mean item values tend to maintain their same relative position from group to group.

It has been shown in Table 3 that Mastery ratings have a higher correlation with In-Teaching ratings than with Pre-Teaching ratings. Correspondingly, item Comprehension responses of certain previous groups manifest similar but more striking differences in correlations with Pre-Teaching and In-Teaching ratings made by the present group. These cross-group correlations are listed in Table 25.

Table 25. Coefficients of Correlation of Pre-Teaching and In-Teaching Ratings of the Present Group with Item Comprehension Ratings of Previous Teacher Groups: Proposals

Previous Group	N	Coefficient of Correlation					
		Psych. Items		Educ. Items		All Items	
		Pre-Teach.	In-T.	Pre-T.	In-T.	Pre-T.	In-T.
Urban Teachers	37	.339	.813	-.007	.675	.148	.824
Suburban	23	.479	.780	.051	.669	.232	.813
Rural	18	.354	.709	.040	.579	.175	.743
Combined Group	78	.411	.820	.024	.687	.191	.835

Thus, the Combined Group Pre-Teaching and In-Teaching correlations with Comprehension of .191 and .835 respectively are seen to differ from one another more sharply than do the corresponding correlations in Table 3 of .289 and .720 for the Pre-Teaching and

In-Teaching ratings of the Proposals items, based on Mastery.

Of additional interest in Table 25 are the essential similarity of results for the urban, suburban, and rural groups, and the less marked difference between Pre-Teaching and In-Teaching correlations for the Psychological Foundations items as compared with those for the Educational Applications items.

The pattern of cross-group relationships entailing the three criterial ratings of the present group with Comprehension ratings of certain previous groups, as shown in Tables 24 and 25, is essentially repeated when Importance ratings are substituted for Comprehension ratings. The correlations with Importance ratings are set forth in Table 26.

Table 26. Coefficients of Correlation Between Mastery, Pre-Teaching, and In-Teaching Ratings of the Present Group with Item Importance Ratings of Previous Teacher Groups: Proposals

Previous Group	N	Coefficients of Correlation								
		Psych. Items			Educ. Items			All Items		
		Mas.	Pre-T.	In-T.	Mas.	Pre-T.	In-T.	Mas.	Pre-T.	In-T.
Urban Teachers	37	.681	.415	.793	.584	-.036	.720	.740	.173	.840
Suburban	23	.621	.422	.743	.487	.191	.532	.691	.250	.787
Rural	18	.605	.230	.681	.613	.131	.612	.696	.151	.745
Combined Group	78	.673	.382	.790	.612	.074	.689	.743	.195	.835

When the criterion to be used by the previous groups in judging the items is changed to refer to the extent to which the item is applied in teaching practice, the correlationsof this Application rating with present group ratings of Mastery remain roughly as with Comprehension

and Importance. However, the correlations of Application ratings with Pre-Teaching and In-Teaching ratings are quite different, as indicated in Table 27.

Table 27. Coefficients of Correlation Between Mastery, Pre-Teaching, and In-Teaching Ratings of the Present Group with Item Application Ratings of Previous Teacher Groups: Proposals

Previous Group	N	Coefficients of Correlation								
		Psych. Items			Educ. Items			All Items		
		Mas.	Pre-T.	In-T.	Mas.	Pre-T.	In-T.	Mas.	Pre-T.	In-T.
Urban Teachers	37	.680	.434	.690	.595	.280	.461	.725	.307	.711
Suburban	23	.687	.547	.670	.430	.365	.301	.676	.403	.649
Rural	18	.651	.348	.625	.715	.340	.413	.721	.306	.630
Combined Group	78	.701	.467	.693	.632	.354	.436	.741	.353	.702

It is evident from Table 27 that the sharp distinctions between Pre-Teaching and In-Teaching coefficients previously shown as resulting from the use of either the Comprehension or the Importance ratings do not apply when the Application criterion is employed. This is particularly noticeable with respect to the Educational Applications items.

The shift in the relation of Pre-Teaching and In-Teaching relations with the several criteria is more clearly shown in Table 28, which presents in a rearranged pattern data already listed in Tables 25 to 27. In this table the differences between the Pre-Teaching and In-Teaching coefficients are shown for each criterion and for each previous group of respondents.

Table 28. Differences Between Correlations of Pre-Teaching and In-Teaching Ratings by the Present Group with Comprehension, Importance, and Application Ratings by Previous Teacher Groups: Proposals

Previous Group	Correlations and Differences								
	Comprehension			Importance			Application		
	Pre-T.	In-T.	Diff.	Pre-T.	In-T.	Diff.	Pre-T.	In-T.	Diff.
Urban Teachers:									
Psych. Items	.339	.813	-.474	.415	.793	-.379	.434	.690	-.256
Educ. Items	-.007	.675	-.668	-.036	.720	-.694	.280	.461	-.181
All Items	.148	.824	-.676	.173	.840	-.667	.307	.711	-.404
Suburban Teachers:									
Psych. Items	.479	.780	-.311	.422	.743	-.321	.547	.670	-.113
Educ. Items	.051	.669	-.618	.191	.532	-.341	.365	.301	.064
All Items	.232	.813	-.581	.250	.787	-.537	.403	.649	-.246
Rural Teachers:									
Psych. Items	.354	.709	-.345	.230	.681	-.451	.348	.625	-.277
Educ. Items	.040	.579	-.539	.131	.612	-.479	.340	.413	-.073
All Items	.175	.743	-.568	.151	.745	-.594	.306	.630	-.324
Combined Group:									
Psych. Items	.411	.820	-.409	.382	.790	-.408	.467	.693	-.226
Educ. Items	.024	.687	-.663	.074	.689	-.615	.354	.436	-.082
All Items	.191	.835	-.644	.195	.835	-.640	.353	.702	-.349

In Table 28 several observations are clearly discernible. In 35 of 36 comparisons the Pre-Teaching correlation is lower than the In-Teaching correlation. In all instances the correlation for Educational Applications items is lower than that for Psychological Foundations items, due inpart, perhaps, to the smaller number of items in the former category. Finally, and somewhat difficult to explain, is the re-

duced difference between Pre-Teaching and In-Teaching correlations for the Application criterion as compared with the two other criteria. It will be necessary to introduce additional considerations at a later time to provide at least a hypothetical interpretation of the last observation.

Meanwhile, the comparison of ratings of the present teacher group with a group of eight supervisors and teacher trainers may prove of interest. The Staff group, socalled, were asked to judge the Proposals items according to three criteria: Comprehension by teachers, Importance in teaching, and Application by teachers. Table 29 gives the correlations of the mean item ratings by the Staff group with those of the present teacher group.

Table 29. Coefficients of Correlation Between Mastery, Pre-Teaching, and In-Teaching Ratings of the Present Group with Ratings of Comprehension, Importance, and Application Made by a Staff Group of Supervisors and Teacher Trainers: Proposals

Criteria and Items	Coefficients of Correlation		
	Comprehension	Importance	Application
Mastery:			
Psych. Items	.537	.607	.593
Educ. Items	.676	.320	.414
All Items	.659	.620	.630
Pre-Teaching:			
Psych. Items	.407	.326	.272
Educ. Items	.074	.496	.318
All Items	.217	.340	.251
In-Teaching:			
Psych. Items	.596	.510	.421
Educ. Items	.666	.230	.284
All Items	.684	.573	.513

Making allowance for the small size of the Staff group and using a rough scale of comparison, Table 29 is seen to indicate that the supervisors and teacher trainers sampled agree with the present teacher group in the extent of matching of the several sets of ratings in much the same way as do the previous teacher groups - with two exceptions of note: (1) the Educational Applications items in the Importance column show a disagreement as between Staff and previous teacher groups; and (2) teacher-teacher correlations show close correspondence between the Comprehension and Importance criteria, whereas the Staff-teacher correlations tend to show agreement between the Importance and the Application criteria. These exceptions do not affect striking differences previously noted between the relative inferiority of Pre-Teaching correlations to In-Teaching correlations where either the Psychological items or All Items are considered.

On the whole, Tables 24 through 29 support a general thesis of high consistency across groups of raters, with several particular exceptions as noted.

10. What relation holds between Pre-Teaching versus In-Teaching training preference on the one hand and immediate versus long-range need to study topics in Educational Psychology on the other?

Data presented to this point have indicated certain relationships between the Mastery, Pre-Teaching, and In-Teaching ratings of the Proposals items by the present group and the Comprehension, Importance, and Application ratings by several previous teacher groups

and a Staff group. We turn now to a series of cross-group relationships relative to a second type of item, namely, Topics in Educational Psychology.

Whereas the present group of teachers judged the 78 listed Topics in Educational Psychology in terms of their Mastery and the extent to which Pre-Teaching training and In-Teaching training should contribute to mastery, several previous teacher groups and a group of curriculum workers were asked to respond to the items according to the need on the part of teachers to study the topics in relation (1) to the more immediate improvement of their teaching; and (2) to the long-range development of a fully competent master teacher. By correlating the Pre-Teaching and In-Teaching training ratings with the Immediate and Long-Range need to study ratings it was hoped that some light might be thrown on the subjective meaning of each.

Table 30 sets forth the correlations between present-group Mastery, Pre-Teaching, and In-Teaching ratings and Immediate and Long-Range need-to-study ratings at the beginning and the end of a course in Advanced Educational Psychology by one group of 12 teachers in the Spring of 1970 and another group of 20 teachers in the Summer of 1970. The table gives the unweighted average correlations of the two groups combined, averaging the beginning and end of course ratings as well. The results are shown for the Psychological Foundations items and the Educational Applications items separately and for All Items. Differences between correlations for Immediate and Long-Range ratings and for Pre-Teaching and In-Teaching ratings are also indicated.

Table 30. Coefficients of Correlation Between Mastery, Pre-Teaching, and In-Teaching Ratings by the Present Teacher Group and Combined Beginning and End of Course Ratings of Immediate and Long Range Need to Study Topics in Educational Psychology by Two Previous Groups of Teachers

Criteria	Coefficients of Correlation (Average of two previous groups at beginning and end of course)		
	Psych. Found.	Educ. Applic.	All Items
Mastery with:			
Immediate Need	.615	.635	.624
Long Range Need	.408	.331	.348
Difference	.207	.304	.276
Pre-Teaching with:			
Immediate Need	.317	.365	.299
Long Range Need	.228	.373	.309
Difference	.089	-.008	-.010
In-Teaching with:			
Immediate Need	.446	.646	.536
Long Range Need	.383	.324	.346
Difference	.063	.322	.190
Immediate Need with:			
Pre-Teaching	.317	.365	.299
In-Teaching	.446	.646	.536
Difference	-.129	-.281	-.237
Long Range Need with:			
Pre-Teaching	.228	.373	.309
In-Teaching	.383	.324	.346
Difference	-.155	.049	-.037

In Table 30, correlations entailing Immediate Need ratings are seen to be higher than those entailing Long Range Need when correlated with Mastery ratings and In-Teaching ratings. This is not so with Pre-Teaching ratings, where correlations, also, are lower, in general, than those for either Mastery or In-Teaching ratings.

What emerges from an examination of the table is the conclusion that Mastery and In-Teaching ratings by the present teacher group are fairly strongly related to Immediate Need ratings of Topics by the previous teacher groups, but that Pre-Teaching ratings and Long Range Need ratings show weak though positive correlations.

In general, cross-group ratings of the Topics items do not stand up as well as comparable correlations of Proposals item ratings.

Speculatively, one may infer that the generality of a topic, as contrasted with the specificity of a proposal, and the temporal distance of the Pre-Teaching period on the one hand and of the Long Range Need on the other may have the effect of weakening the internal consistency and hence the inter-criterial relationship of the ratings concerned.

As straws in the wind it may be noted that the lowest correlation in Table 30 is that of .228 between Pre-Teaching ratings and ratings of Long Range Need for the Psychological Foundations items, while the highest coefficient if that of .646 between In-Teaching ratings and those of Immediate Need for the Educational Applications items.

The cross-group correlations between ratings by the present teacher group and those of previous teacher groups reported in Table 30 remain roughly the same when responses of a staff group of curriculum workers replaces those of the previous teacher groups, as noted in Table 31. The curriculum worker group consisted of 16 members of a large city bureau of curriculum development whose experience in curriculum and supervision ranged from several years to several decades. To assay the possible relation of judgments to amount of experience, the group was divided equally into two subgroups according to years of curriculum and administrative experience. These subgroups are designated Less and More experience respectively.

Table 31 reveals that with curriculum staff as with teachers, correlations of ratings with those of the present teacher group tend to be higher for Immediate Need than for Long Range Need, in the case of staff, with Pre-Teaching as well as Mastery and In-Teaching ratings. Pre-Teaching correlations are lower than those for either Mastery or In-Teaching.

Correlations entailing Psychological Foundations items are generally higher than Educational Applications items with respect to the Mastery and Pre-Teaching criteria, and lower for the In-Teaching criterion.

With regard to the factor of amount of experience on the part of the curriculum workers, the More experienced yield somewhat higher correlations for the In-Teaching criterion and somewhat lower coefficients for the Pre-Teaching criterion. With respect to Mastery, the Less experience group correlation is higher for the Psychological Foundations items, and lower for the Educational Applications items.

Table 31. Coefficients of Correlation Between Mastery, Pre-Teaching, and In-Teaching Ratings by the Present Teacher Group with Ratings of Immediate and Long Range Need to Study Topics in Educational Psychology As Made by Curriculum Workers

Criteria	Coefficients of Correlation		
	Psych. Found.	Educ. Applic.	All Items
Mastery with:			
Immediate Need	.678	.585	.660
Long Range Need	.594	.412	.519
Diff. in Correlation	.084	.173	.141
Ave. Imm. and L.R. Need:			
Less Experienced	.664	.352	.547
More Experienced	.602	.538	.593
Total Group	.675	.541	.636
Pre-Teaching with:			
Immediate Need	.341	.302	.217
Long Range Need	.250	.110	.111
Diff. in Correlation	.089	.192	.106
Ave. Imm. and L.R. Need			
Less Experienced	.458	.233	.258
More Experienced	.183	.221	.114
Total Group	.321	.242	.189
In-Teaching with:			
Immediate Need	.518	.555	.566
Long Range Need	.415	.448	.456
Diff. in Correlation	.103	.107	.110
Ave. Imm. and L.R. Need			
Less Experienced	.383	.426	.425
More Experienced	.469	.560	.543
Total Group	.546	.562	.552

In sum, Tables 30 and 31 add to the overall picture of cross-group interrelationships among criterial ratings of Topics in Educational Psychology, and provide further support for a principle of temporal distance whereby criterial ratings having a here-and-now reference are found to relate more closely than those entailing a time difference.

11. What relations hold between Mastery, Pre-Teaching, and In-Teaching ratings and ratings of Mastery and Importance of the Teaching Abilities items?

As previously noted, in addition to judging Topics in Educational Psychology and Psychoeducational Proposals, the present group rated 44 Teaching Abilities in terms of Mastery, and Pre-Teaching and In-Teaching training preference. Hence it is possible to consider further the question of the commonality of relationships across item types. A perusal of the Teaching Abilities items as compared with the two other types will, no doubt, reveal their relatively comprehensive and general nature as compared with the Psychoeducational Proposals. The Teaching Abilities items will also be seen to be more definite and perhaps more comprehensible than the Topics in Educational Psychology, as listed. To determine whether the previously obtained criterial relations hold for this type of item as they did for the others, the ratings of the present group were correlated with those of two other groups: (1) a group of 16 teachers during the earlier period of a course in Advanced Educational Psychology; and (2) a group of 11 teachers toward the end of a Seminar in Problems of Elementary School Teaching. Both courses were offered in the Fall of 1970.

Table 32 gives the cross-group correlations between Mastery, Pre-Teaching, and In-Teaching ratings of the Teaching Abilities items by the present group with the ratings of these items in Mastery and in Importance by the two previous groups of teachers, considered separately and together.

Table 32. Coefficients of Correlation between Mastery, Pre-Teaching, and In-Teaching Ratings of the Present Teacher Group and Ratings of Mastery and of Importance by Two Previous Groups of Teachers: Teaching Abilities

Criteria	Coefficients of Correlation		
	Adv. Educ. Psych. Course Group	Elem. Educ. Course Group	Average Correlation
Mastery with:			
Mastery	.627	.645	.626
Importance	.385	.393	.389
Pre-Teaching with:			
Mastery	.042	.091	.066
Importance	.039	.246	.142
In-Teaching with:			
Mastery	.568	.506	.537
Importance	.470	.448	.459

The table indicates that cross-group correlations of Mastery with Mastery ratings are moderately high, and appreciably higher than correlations between Mastery and Importance ratings. In-Teaching correlations continue to prove considerably higher than Pre-Teaching correlations. Importance ratings trail Mastery ratings when correlated with In-Teaching ratings, but not by a great amount. The closeness of the size of correlations as between the two course groups is striking evidence of the dependability of the findings.

12. How are cross-group correlations affected by item type and rating criteria employed?

The presentation of cross-group correlations has pointed up certain relative constancies, particularly with respect to the difference between Pre-Teaching and In-Teaching correlations as the several criteria were applied to the three types of items. Also noted were the generally moderately high correlations entailing the Mastery criterion. An overall summary of these findings showing the coefficients for combined groups and all items of a given type as between present-group Mastery, Pre-Teaching, and In-Teaching ratings on the one hand and previous-group criterial ratings on the other is set forth in Table 33.

Table 33. Summary of Cross-Group Correlations Between Mastery, Pre-Teaching, and In-Teaching Ratings and Criterial Ratings of All Items of a Given Type by Combined Previous Groups

	Coefficients of Correlation		
	Mastery	Pre-Teaching	In-Teaching
Proposals (48 Items)			
Teachers (N equals 78):			
Comprehension	.743	.191	.835
Importance	.743	.191	.835
Application	.741	.353	.702
Staff (N equals 8):			
Comprehension	.659	.217	.684
Importance	.620	.340	.573
Application	.630	.251	.513
Topics (78 Items)			
Teachers (N equals 20,20):			
Immediate Need	.624	.299	.536
Long Range Need	.348	.309	.346
Curriculum Workers (N equals 16):			
Immediate Need	.660	.217	.566
Long Range Need	.519	.111	.456
Abilities (44 Items)			
Teachers (N equals 16,11):			
Mastery	.626	.066	.537
Importance	.389	.142	.459

Table 33 suggests that with small exception, relationships among criterial ratings tend to be essentially similar across item types. Most significant among these almost universally corresponding relationships is the marked superiority of correlations entailing the In-Teaching over the Pre-Teaching ratings.

Coupled with the tendency toward low correlations when ratings of Long Range Need to study Topics are involved, the above alluded-to finding suggests that teacher judgments are likely to be most dependable in reference to present training needs rather than to past or future ones. It is noteworthy that curriculum workers agreed quite well with the teachers in judging Mastery of Topics and both Immediate and Long Range Need to study Topics in relation to In-Teaching training preferences of the teachers, but as in the case of teacher cross-groups, they failed to agree with present teachers in relations involving Pre-Teaching training preferences.

The generally strong correlations associated with Mastery ratings of the present group compared with various criterial ratings of previous groups accent the pervasive role of Mastery in affecting other criterial judgments in much the same way, if inversely, that the technicality of an item was found to affect other item characteristics and ratings, as depicted earlier in this report.

13. How do the means and variabilities of the distributions of mean item ratings compare for the several item types, rating criteria, and respondent groups?

In Table 1, the means and standard deviations of the distributions of mean item ratings were listed according to item type and rating cri-

terion for the present teacher group. Similar data based on subcategories of items grouped according to item characteristics were given for Proposals items in Tables 5, 9, 11, 14, and 16. The present section lists the means and the standard deviations of the distributions of mean item ratings for the various item types, criteria, and groups referred to in the correlations noted in the previous sections of this report. In addition to providing possibly interesting comparisons in their own right, these data may serve, in part, in adding somewhat to the appraisal of the reported correlations. The means and standard deviations are presented in Tables 34, 35, and 36.

Table 34. Means and Standard Deviations of the Distributions of Mean Item Ratings for Various Rating Criteria and Respondent Groups: Proposals Items

Group and Criteria	Means			Standard Deviations		
	Psych. Items	Educ. Items	All Items	Psych. Items	Educ. Items	All Items
Present Teachers (N:10)						
Mastery	2.05	2.33	2.16	.24	.23	.27
Pre-Teaching	2.19	2.19	2.19	.17	.28	.22
In-Teaching	2.20	2.60	2.35	.27	.22	.31
Urban Teachers (N:37)						
Comprehension	1.97	2.30	2.10	.33	.29	.35
Importance	2.28	2.60	2.40	.27	.21	.29
Application	1.90	2.16	2.00	.29	.23	.29
Suburb. Teachers (N:23)						
Comprehension	2.05	2.47	2.21	.38	.34	.41
Importance	2.28	2.65	2.42	.31	.23	.33
Application	1.83	2.08	1.92	.34	.25	.33
Rural Teachers (N:18)						
Comprehension	1.93	2.30	2.07	.39	.36	.42
Importance	2.19	2.54	2.32	.35	.30	.31
Application	1.97	2.19	2.05	.30	.28	.31
Combined Group (N:78)						
Comprehension	1.99	2.35	2.12	.34	.30	.37
Importance	2.26	2.60	2.39	.29	.23	.29
Application	1.89	2.15	1.99	.34	.30	.37
Staff Group (N:8)						
Comprehension	1.90	2.22	2.02	.38	.37	.40
Importance	2.25	2.56	2.36	.33	.28	.34
Application	1.51	1.73	1.59	.23	.22	.25

The new data presented in Table 34 delineate criterion comparisons in mean item values assigned by the several previous groups. It is evident that the Proposals items are rated considerably higher in Importance than in either Comprehension or Application for both the Psychological Foundations and the Educational Applications categories of items. With a slight exception in one group, items are rated lower in Application than in Comprehension. The Staff group rate the Application of items of both categories sharply lower than do teachers, while roughly approximating the teacher group ratings with respect to the other two criteria. Educational Applications items are rated higher on all criteria by all the previous groups when compared with Psychological Foundations items.

The mean item ratings of the Combined Teacher Group vary appreciably less for the Importance criterion than for the Comprehension or Application criteria, whereas the Application criterion yields the least variability in mean item values when applied by the Staff Group.

With the several exceptions noted, the table reveals consistent patterns of relationships, thus further confirming cross-group dependability of the ratings.

The next table, Table 35, which lists means and standard deviations of various group distributions of mean values for Topics items, shows consistently higher ratings for the Long Range need to study items than the Immediate need, the difference being greater for Psychological Foundations items than for Educational Applications items. End of course ratings of both Immediate and Long Range need are appreciably higher than beginning of course ratings. The Less experienced Curriculum workers rate the Psychology items somewhat higher than their More

experienced colleagues, and the Education items a trifle lower.

Table 35. Means and Standard Deviations of Distributions of Mean Item Ratings for Various Rating Criteria and Respondent Groups: Topics Items

Group and Criteria	Means			Standard Deviations		
	Psych. Items	Educ. Items	All Items	Psych. Items	Educ. Items	All Items
Present Teachers (N:10)						
Mastery	2.00	2.12	2.05	.20	.26	.23
Pre-Teaching	2.34	2.19	2.28	.21	.32	.27
In-Teaching	2.26	2.41	2.32	.26	.24	.26
Previous Teachers: Sp.'70						
Course Beg. (N:12)						
Immediate Need	2.05	2.09	2.07	.30	.38	.33
Long Range Need	2.23	2.17	2.21	.22	.33	.27
Course End (N:12)						
Immediate Need	2.25	2.27	2.26	.23	.33	.28
Long Range Need	2.35	2.37	2.36	.19	.25	.22
Previous Teachers: Su.'70						
Course Beg.(N:20)						
Immediate Need	2.23	2.33	2.27	.29	.36	.32
Long Range Need	2.46	2.41	2.44	.21	.23	.22
Course End (N:20)						
Immediate Need	2.52	2.56	2.53	.22	.28	.25
Long Range Need	2.65	2.65	2.65	.11	.15	.13
Curriculum Workers;						
Less Experienced (N:8)						
Immediate Need			2.09			.31
Long Range Need			2.44			.22
Ave. Imm. & L.R. Need	2.22	2.31	2.26	.20	.28	.24
More Experienced (N:8)						
Immediate Need			2.06			.52
Long Range Need			2.37			.32
Ave. Imm. & L.R. Need	2.12	2.34	2.21	.38	.39	.40
Total Curriculum Group(N:16)						
Immediate Need	1.98	2.20	2.08	.31	.43	.38
Long Range Need	2.36	2.45	2.40	.21	.23	.22
Ave. Imm. & L.R. Need	2.17	2.32	2.23	.25	.31	.29

With regard to the variability of the distributions, Table 35 indicates that the Psychological Foundations mean item values tend to be less variable than those for Educational Applications, and that the More experienced curriculum workers yield more variable ratings than do the Less experienced.

Table 36 presents the means and standard deviations of distributions of mean values of the Teaching Abilities items. The superiority of Importance over Mastery ratings noted in conjunction with the Proposals items is even more strikingly demonstrated in respect to the Abilities items, both for the course group in Educational Psychology and the one in Problems of Elementary Education. The difference in mean ratings for the two criteria is about the same for the 8 Psychological Foundations items as for the 36 Educational Applications items in the Teaching Abilities group of items.

Table 36. Means and Standard Deviations of the Distributions of Mean Item Ratings for Various Rating Criteria and Respondent Groups: Abilities Items

Group and Criteria	Means			Standard Deviations		
	Psych. Items	Educ. Items	All Items	Psych. Items	Educ. Items	All Items
Present Teachers (N:10)						
Mastery	2.17	2.23	2.22	.23	.38	.35
Pre-Teaching	2.18	2.17	2.17	.22	.24	.23
In-Teaching	2.44	2.55	2.53	.23	.19	.20
Adv.Ed.Psych.Course(N:16)						
Mastery	2.08	2.20	2.16	.22	.27	.26
Importance	2.55	2.73	2.70	.30	.13	.17
Elem. Educ. Course (N:11)						
Mastery	2.03	2.18	2.15	.24	.27	.27
Importance	2.55	2.67	2.64	.32	.20	.22

Differences in the composition of respondent groups and in the statement of criteria notwithstanding, the three tables depicting means and standard deviations of item rating distributions for the three types of items present a generally consistent pattern of relationships. The principal rating distinctions between groups and/or criteria are set forth in Table 37 together with the statistical significance of the several differences.

Table 37. Size and Statistical Significance of Differences Between Selected Group and Criterion Mean Item Ratings of the Three Item Types As Judged by Previous Teacher and Staff Groups

Comparison	N's	Difference	t	Chances of No Difference
		Proposals Items		
Combined Teacher Group:				
Psych. vs. Educ. Items				
Comprehension	30,18	-.36	-3.631	Less than .01
Importance	30,18	-.34	-5.462	Less than .01
Application	30,18	-.26	-2.623	Less than .01
All Items				
Compr. vs. Import.	48,48	-.27	-3.938	Less than .01
Compr. vs. Applic.	48,48	.13	1.704	Less than .05
Import. vs. Applic.	48,48	.40	6.521	Less than .01
Staff Group:				
Psych. vs. Educ. Items				
Comprehension	30,18	-.32	-2.793	Less than .01
Importance	30,18	-.31	-3.261	Less than .01
Application	30,18	-.22	-3.193	Less than .01
All Items				
Compr. vs. Import.	48,48	-.34	-4.441	Less than .01
Compr. vs. Applic.	48,48	.43	6.251	Less than .01
Import. vs. Applic.	48,48	.77	12.512	Less than .01
		Topics Items		
Teacher Groups:				
Immed. vs. Long R.(All It.)				
Sp.'70 Group: Beginning	78,78	-.14	-2.881	Less than .01
End Term	78,78	-.10	-2.465	Less than .01
Su.'70 Group: Beginning	78,78	-.17	-3.843	Less than .01
End Term	78,78	-.08	-3.738	Less than .01
Curriculum Workers:				
Immed. vs. Long R.(All It.)				
Less Experienced	78,78	-.35	-8.081	Less than .01
More Experienced	78,78	-.31	-4.456	Less than .01
Total Group	78,78	-.32	-6.396	Less than .01
Less vs. More (I&L Ave.)				
Psych. Items	46,46	.10	1.563	Less than .10
Educ. Items	32,32	-.03	-0.348	Less than .50
All Items	78,78	.05	0.941	Less than .20
Psych. vs. Educ. Items				
Immediate Need	46,32	-.22	-2.592	Less than .01
Long Range Need	46,32	-.09	-1.767	Less than .05
Ave. I&L Need	46,32	-.15	-2.329	Less than .02
		Abilities Items		
Adv. Ed. Psych Course Gr.:				
Mastery vs. Importance				
Psych. Items	8,8	-.47	-3.343	Less than .01
Educ. Items	36,36	-.53	-10.466	Less than .01
All Items	44,44	-.54	-11.402	Less than .01
ELem. Educ. Course Group:				
Mastery vs. Importance				
Psych. Items	8,8	-.52	-3.440	Less than .01
Educ. Items	36,36	-.49	-8.630	Less than .01
All Items	44,44	-.49	-9.228	Less than .01

With few exceptions the differences between mean item ratings for the groups and criteria reported in Table 37 are statistically significant to the extent of going beyond 99 chances in 100 that the difference would be obtained from repeated samplings, assuming zero correlation between paired measures. The principal exception is to be found in the difference between the Less and the More Experienced Curriculum Workers with respect to Educational Applications items, where the distinction is close to a 50-50 chance level.

On the Proposals items the Teacher group and the Staff group agree very closely in the amount of difference between the Psychological Foundations items and the Educational Applications items, as rated, for each of the criteria, separately considered. As regards differences between criteria, the two groups agree in the direction of the differences, but not in the amount of difference, the Staff group distinctions between criteria being sharper than those for the Teacher group.

Especially striking is the discrepancy between the Importance and Application ratings made by the Staff group. A corresponding distinction is found in the difference between the Importance and Mastery ratings of the Abilities items by both of the course groups reported in the table. Staff and teachers are clearly seen to place the importance of the ideas and abilities presented well above their mastery or application.

The Long Range need to study the Topics in Educational Psychology is more fully recognized than the Immediate need to study them. This

is more clearly indicated for the Curriculum Workers than for the Teacher groups. The Less Experienced Curriculum Worker group is slightly more inclined toward the Psychological Foundations Topics than toward those stressing Educational Applications, but this is an exception to the general favoring of Educational Applications items over the Psychological Foundations items for all three types of items.

The similarity in difference data for comparable Teacher groups again confirms the conclusion of essential dependability of the group judgments of the kind here studied.

14. What relations hold between ratings of the same criterion by different respondent groups?

The cross-group correlations between ratings of items according to a given criterion reflect the reliabiability of ratings of each of the two groups concerned plus such factors as may induce each group to rate items differently from the other group. Except for chance, the inter-test correlation may not be higher than the intra-test reliability coefficient of the less reliable of the two test series. Hence, inter-group coefficients that are high demonstrate the reliability of the ratings employed. Table 38 summarizes inter-group correlation findings where items of each of the three types have been judged with respect to a given criterion by stated pairs of previous groups of Teachers and Staff. The number of respondents whose judgments were used to determine the mean item ratings in each comparison is indicated next to the listing of each pair of groups.

Table 38. Cross-Group Correlations for the Same Criterion of Ratings of All Items of a Given Type by Stated Pairs of Previous Groups of Teachers and Staff

Comparison Groups	N's	Criteria		
Proposals (48 Items)		Comprehension	Importance	Application
Urban vs. Suburban Teachers	37,23	.896	.914	.827
Urban vs. Rural Teachers	37,18	.847	.834	.766
Suburban vs. Rural Teachers	23,18	.820	.846	.791
Combined Teachers vs. Staff	78,8	.837	.769	.585
Topics (78 Items)		Immediate Need	Long R. Need	Ave. I&L
Beginning of Course:				
Sp.'70 vs. Su.'70 Teachers	12,20	.768	.567	.760
Sp.'70 Teachers vs.:				
Less Exp. Cur. Workers	12,8	.589	.359	.501
More Exp. Cur. Workers	12,8	.746	.572	.708
Total Cur. Workers	12,16	.742	.573	.698
Su.'70 Teachers vs.:				
Less Exp. Cur. Workers	20,8	.645	.368	.566
More Exp. Cur. Workers	20,8	.768	.397	.711
Total Cur. Workers	20,16	.780	.452	.727
End of Course:				
Sp.'70 vs. Su.'70 Teachers	12,20	.619	.664	.677
Sp.'70 Teachers vs.:				
Less Exp. Cur. Workers	12,8	.517	.394	.490
More Exp. Cur. Workers	12,8	.629	.567	.616
Total Cur. Workers	12,16	.634	.585	.630
Su.'70 Teachers vs.:				
Less Exp. Cur. Workers	20,8	.626	.318	.536
More Exp. Cur. Workers	20,8	.592	.445	.574
Total Cur. Workers	20,16	.653	.463	.620
Less vs. More Exp. Cur.Wks.	8,8	.694	.416	.608
Abilities (44Items)		Mastery	Importance	
Adv. Ed. Psych Course vs. Seminar in Elem. Educ.	16,11	.730	.584	

Table 38 reveals a notably high degree of dependability and commonalty of ratings of the Proposals items among Urban, Suburban, and Rural groups, the average correlation for paired groups employing all three criteria being .838. Correlations of ratings by Teachers as against Staff are somewhat lower, especially with regard to the Applications criterion, but still quite high, on the average.

Correlations of ratings of the Topics items by paired groups are higher, with one exception, for Immediate need to study ratings than for Long Range need. With respect to Immediate need, ratings at the end of a course in Advanced Educational Psychology show lower correlations than do those made at the beginning of the course. The results in this regard for Long Range need correlations are mixed. While Teacher-Teacher group and Teacher-Curriculum Worker group correlations are of the same order for Immediate need ratings, there is indication of a small lowering of the correlations for Teacher-Curriculum Worker groups when Long Range need ratings are employed.

With regard to correlations entailing ratings of Abilities items. the Mastery criterion is seen to yield a somewhat higher correlation between two course groups than does the Importance criterion.

The consistently high to moderately high cross-group correlations for the same criterion with only rare exception augurs well for the use of even relatively small groups in the judgment of training elements. Exceptions to the rather high relationships are likely to be found among correlations entailing ratings of the Long Range need to study Topics in Educational Psychology.

15. What can the findings reveal about individual items?

The main, ultimate use to which studies of the present type may be put is the facilitation of decisions as to the selection and placement of items to be mastered in programs of teacher preparation and growth. It is therefore appropriate to close the presentation of findings with a consideration of data concerning individual items, which are, in a sense, the units about which decisions need to be made.

In section 3 of the Findings sample items have been reproduced under four categories according to whether the present group of teachers tended to give them a high or low recommendation for placement in the Pre-Teaching and the In-Teaching Periods. The complete sets of items are listed in Appendixes 1, 2, and 3. These include the Teaching Abilities, the Topics in Educational Psychology, and the Psychoeducational Proposals.

In the order of item types listed above, Appendixes 4, 5, and 6 present the mean item values of ratings by the present Teacher group according to Mastery, Pre-Teaching, and In-Teaching criteria, together with information as to how each item was categorized under each of the item characteristics named in Exhibit 5. It will be noted that the Key refers to the item characteristics and categories treated in sections 3 through 8 of the Findings.

Exhibit 5. Key to Categories Under Each Item Characteristic.

A. Type of Item:

1. Teaching Abilities
2. Topics in Educational Psychology
3. Psychoeducational Ideas

B. Foundational vs. Applied Emphasis:

1. Psychological Foundations
2. Educational Applications

C. Pre-Teaching vs. In-Teaching Placement Quadrant:

1. High Pre-Teaching, High In-Teaching Rating
2. High Pre-Teaching, Low In-Teaching Rating
3. Low Pre-Teaching, High In-Teaching Rating
4. Low Pre-Teaching, Low In-Teaching Rating

D. Specific Aspect of the Teaching-Learning Process:

1. General Teaching-Learning Model: Feedback
2. Educational Objectives
3. Learner Development and Readiness
4. Learner Motivation: Psychodynamics
5. Teacher-Pupil Roles: Interpersonal Relations
6. Curriculum Selection, Sequencing, and Organization
7. General Teaching-Learning Procedures
8. Cognitive Psychology Contributions to Teaching-Learning Procedures
9. Behaviorist-Connectionist Contributions to Teaching-Learning Procedures
10. Individual Differences and Exceptionalities

E. General Aspects of the Teaching-Learning Process:

1. Learners
2. Curriculum
3. Procedures

F. School of Psychological Thought:

1. General
2. Behaviorist-Connectionist
3. Psychodynamic
4. Cognitive

G. Degree of Technical Difficulty:

1. Low
2. Intermediate
3. High

It will be noted that the categorical placement of the Proposals items was made for several item characteristics beyond those applied to the Abilities and Topics items. Still other characteristics may be applied at will according to the interests of the investigator. In this regard the present report is intended to demonstrate the procedure rather than to exploit it fully.

In line with the over all intent to illustrate the form that an item data bank may take, mean item ratings on a number of additional criteria as applied to the several item types by different groups of respondents are reproduced in Appendixes 7, 8, and 9.

The data in these appendixes refer to certain of the variables studied in the analysis of cross-group relationships involving previous groups, as follows:

For Proposals items: the criteria of Comprehension, Importance, and Application as applied by (1) the Combined Teacher Group, and (2) the Staff group.

For Topics items: the criteria of Immediate and Long Range need to study as applied by (1) a Summer 1970 group of Teachers enrolled in a course in Advanced Educational Psychology (a) at the beginning and (b) at the end of the course, and (2) a group of Curriculum Workers.

For Teaching Abilities: the criteria of Mastery and Importance as applied by (1) a Teacher group in a course in Advanced Educational Psychology, and (2) a Teacher group in a Seminar in Problems of Elementary Education.

The entries in Appendixes 4 to 9 are part of a considerably larger item data bank that has been accumulated in the course of studying the judgment of teachers and other educational personnel concerning the 170 items employed in the present pilot investigation. Criterial considerations other than those presented in the

current report relate, for the most part, to two main lines of inquiry:

1. What contributions to mastery of the stated items have been made, or might be made, by various training components, such as undergraduate Psychology or Methods courses, student teaching, graduate courses, in-service experience or supervision, etc?

2. How do various factors contribute to or impede the full application ofthe several ideas or abilities to teaching practice?

These other sets of data are presently undergoing analysis. At this time, the discussion of the utilization of an item data bank will be confined to the criteria already presented in this report, namely those having to do with such considerations as recommended pre-teaching versus in-teaching training placement, mastery or comprehension, importance or need to stuay, and application.

To demonstrate the examination of an item in the light of the available data, several items have been selected from one of the three item types and pertinent data have been set forth in one place for these items. Thus, Table 39 reproduces the mean item values of the Proposals type. The selected item number is given at the top, and the applicable groups and criteria are shown at the left of the table. The item characteristics categories applicable to the item are also indicated. The data and the item statements are all drawn from the appendixes. Similar tables may be prepared at will by consulting these appendixes.

Table 39. Item Characteristics and Mean Criterial Item Values of Several Illustrative Proposals Items

Item Characteristic:	Item No. 1	Item No. 38 Category	Item No. 46
A. Item Type	3-Proposal	3-Proposal	3-Proposal
B. Psych vs. Educ.	1-Psych.	1-Psych.	2-Educ.
C. Pre-T vs. In-T	1-High-High	4-Low-Low	2-High-Low
D. Spec. Aspect	7-Gen.Proc.	9-Beh.-Conn.	8-Cog. Proc.
E. Gen. Aspect	1-Learners	3-Procedure	3-Procedure
F. School of Psych.	1-General	2-Beh.-Conn.	4-Cognitive
G. Technicality	1-Low	3-High	1-Low

Group:	Criterion								
	PreT.	InT.	Mas.	PreT.	InT.	Mas.	PreT.	InT.	Mas.
Present Teacher Gr.	2.40	2.50	2.10	2.00	1.70	1.70	2.30	2.10	1.90
	Com.	Imp.	App.	Com.	Imp.	App.	Com.	Imp.	App.
Urban Teachers	2.40	2.86	2.37	1.45	1.86	1.51	2.13	2.37	2.13
Suburban Teachers	2.65	2.82	2.34	1.52	1.95	1.43	2.08	2.47	2.17
Rural Teachers	2.50	2.72	2.27	1.33	1.77	1.72	2.38	2.33	2.16
Combined Teachers	2.50	2.82	2.34	1.44	1.87	1.53	2.17	2.39	2.15
Staff	2.00	2.62	1.37	1.25	2.00	1.12	1.75	2.25	1.50
Su'70 Teachers:									
Beg. of Course	2.80	2.75	2.20	1.60	2.15	1.60	2.45	2.65	2.20
End of Course	2.75	2.95	2.40	2.70	2.80	2.40	2.80	2.85	2.65

The Items

1. In planning and implementing a unit of learning, include provision for the diagnostic analysis of progress and for selective remediation and review.

38. In multiple discrimination learning, note the relative emphasis needed on differentiating between S's as against differentiating between R's.

46. In learning by the problem-solving method, provide prompts where the learner would otherwise be blocked from the opportunity to proceed with needed practice in one or another phase of the total process.

Of the many observations that may be made in a detailed examination of Table 39 only four will be mentioned:

1. With but few exceptions that are notable in their own right, the mean ratings of urban, suburban, and rural teachers are very close to one another at the item level, as they were found to be when combined into group means.

2. Ratings according to the several criteria for a given item tend to be closer to one another than the ratings of different items on any given criterion.

3. Staff ratings are roughly at the level of teacher ratings with respect to Importance, but are noticeably lower with regard to judgments of teachers' Comprehension, and sharply lower in estimates of the extent to which teachers are applying the proposal in practice.

4. In the course of a semester of work in a course in Advanced Educational Psychology the mean item ratings rise with respect to each of the criteria except in an instance where the height of the initial rating may have limited the likelihood of an increase.

Findings such as these raise more questions than they answer. Does the commonalty of responses of different types of teachers imply that the task of searching out essential masteries and their placement in training will require less differentiation than anticipated? Does limited comprehension contribute in a major way to the discrepancy between importance and application of ideas? Would a dialogue between staff and teachers serve to clarify the basis of their disagreements and lead toward the improvement of instruction? Are higher ratings at the end of a course in Educational Psychology a reflection of greater comprehension of the meaning of the statement of the ideas rather than an indication of intrinsic mastery, valuing, or application? If the preparation and consultation of an item data bank can stimulate movement toward the resolution of questions such as these, it may be hoped that further steps may be taken to answer related practical issues regarding training programs.

HIGHLIGHTS SUMMARY

In keeping with a discovery approach, the study has explored one facet after another of the problem of utilizing the judgment of teachers and other educational professionals in clarifying the training needs of teachers. Using lists of teaching abilities, topics in educational psychology, and statements of psychoeducational proposals regarding elements in the teaching-learning process, ratings were procured from urban, suburban, and rural teachers and from a group of teacher trainers or supervisors and a group of curriculum workers. Mean item values were determined for ratings by the several groups according to such criteria as the mastery or comprehension of the item, its importance or the need to study it, its application in teaching practice, and the extent to which it should be included in pre-teaching and in in-teaching training.

Several major questions confronted the investigator: Are ratings of this kind with small groups dependable? To what extent do teachers in different settings agree in their ratings of individual items and in categories of items? Wherin do teachers differ from educational staff groups in these respects? How do ratings according to different criteria relate to one another? What relation exists between the rating of an item and such characteristics as its technicality, the school of psychology from which it is drawn, the aspect of the teaching-learning process to which it relates, the extent to which it stresses psychological foundations as against educational applications, and, above all, suggested emphasis on its

placement in the pre-teaching versus the in-teaching training period?

Numerous tables in the body of the report cast light on these questions. The numbered list of highlights is intended as a recapitulation of the main findings reported in these tables. The appendixes, representing a selection from the more extensive data bank that emerged from the study, lists both the items and the mean item values derived from various criterial ratings by a number of response groups.

The points made in the highlights summary do not follow in order the questions enumerated in a previous paragraph. In fact, the findings, like the questions themselves, are intertwined.

Highlights 1-4 touch on the scope and procedure of the study. Those numbered 7-16 stress the relationships among various characteristics of the items and the pre-teaching versus in-teaching emphasis recommended by the "present" group of teachers. Relationships entailing both similar and somewhat different criteria as rated by the "present" group as compared with "previous" groups of teachers and other staff are summarized under highlights numbered 17-31. These findings serve to answer questions concerning dependability and commonalty of ratings as well as those related to criterial interrelations and, in part, their implications for pre-teaching versus in-teaching emphasis.

Group and criterion relationships are reduced to a more specific and concrete level in highlights statements 32-43, which detail group

means and differences between paired groups with respect to ratings rendered in accordance with the several criteria, together with the statistical significance of the obtained differences.

The matter of the dependability of small-group ratings is picked up again in highlights 44-49, this time with respect to ratings by the "previous" groups according to criteria employed by those groups.

Highlights 50-52 make reference to the item data bank resulting from the accumulation of data and illustrate its use in the interpretation of several sample items from the Proposals list, inviting the reader to consult the appendixes comprising the item data bank for further item information.

Further analysis of the findings with special reference to their implications both for additionally needed research and for their applications in a practical program of curriculum building in teacher education is presented, following the listing of highlights, in a section on discussion of the results of the investigation.

HIGHLIGHTS

Scope

1. Although a detailed analysis of functional teaching competencies is needed as a basis for determining elements of a teacher education program, it is not necessary to await the full and definitive list of such elements before attempting to clarify the related problem of the staging of the effort to achieve representative masteries.

2. In studying problems both of the selection of elements and of their staging, reliance needs to be placed on the judgments of knowledgeable persons, suitably obtained and carefully analyzed.

Procedure

3. The study coordinates an intensive analysis of the judgments concerning pre-teaching as against in-teaching training placement by ten teachers who had just completed a course in Advanced Educational Psychology with those of over a hundred other educational personnel who variously rated 44 teaching abilities, 78 topics in Educational Psychology, and 48 psychoeducational proposals according to such criteria as mastery or comprehension, importance or immediate and long-range need to study, and application.

4. Responses to each of the 170 items on each criterial question were keypunched, and computer programs were prepared to yield: (a) mean item values on each criterion for each item; (b) means and standard deviations of the distributions of mean item values; (c) correlations between paired sets of mean item values; and (d) differences between the means of mean item values for the several criteria and for subsets of items grouped according to designated characteristics of items, as judged by the investigator.

Training Preference and Item Characteristics

5. The characteristics of items to be correlated with Pre-Teaching and In-Teaching ratings, and with other criteria, included: (a) the distinction between emphasis on Foundational Psychology and Educational Applications; (b) implicit school of psychological thought; (c) General Aspect of the Teaching-Learning Process referred to: (d) Specific Aspects of the Teaching Learning Process; and (e) the technical difficulty of the item.

6. Each of the 170 items, on the basis of comparison with others of its type (teaching abilities, topics, or psychoeducational proposals), was placed in one of four categories: High-High, High-Low, Low-High, and Low-Low, according to its quadrant position on a scattergram of Pre-Teaching versus In-Teaching mean item ratings.

7. To illustrate the kinds of items most distinctively representing the four quadrant groups, five items for each group and each item type were selected for listing, they may be read to capture the flavor of Pre-Teaching versus In-Teaching preference on the part of the judges.

8. In order to provide a quantitative indication of the strength of factors possibly associated with the placement of items, differences in mean ratings for distinctions made according to item characteristics are reported, as summarized below.

9. On the whole, Psychological Foundations items receive the same emphasis for the Pre-Teaching period as for the In-Teaching period, but Educational Applications items are weighted more heavily for the In-Teaching as against the Pre-Teaching period.

10. In the case of Psychological Foundations, recommended placement varies with the item type, the Pre-Teaching period being stressed for Topics items while the In-Teaching period is emphasized for Abilities items.

11. With respect to Mastery ratings, the Educational Applications items are judged to be more fully mastered, on the average, than the Psychological Foundations items, the difference being greatest for the Proposals items.

12. As to School of Psychology, Behaviorist-Connectionist items are judged to be least well mastered and receive relatively low ratings in both Pre-Teaching and In-Teaching emphasis, whereas Psychodynamic items, dealing in good part with the learner, his needs, and his milieu, are strongly recommended for the In-Teaching training period and Cognitive items are given an edge in the Pre-Teaching period.

13. With regard to the General Aspects of the Teaching-Learning Process, a preeminent place is assigned items pertaining to Learners during the In-Teaching period: Curriculum items favor the In-Teaching period slightly, while Instructional and Learning Procedures lean somewhat toward the Pre-Training period.

14. When Specific Aspects of the Teaching-Learning Process are considered, a striking difference in favor of the In-Teaching period is shown for the category of Roles and Interaction; two categories referring to Learners and one to Educational Objectives also favor the In-Teaching period, while two categories pertaining to underlying psychological principles of instruction and learning are slightly favored for the Pre-Teaching period.

15. Extreme differences in the technical difficulty of items, as applied to Proposals items, strongly affect recommended placement in the Pre-Teaching versus the In-Teaching periods, Low technicality being associated with the latter and High Technicality with the former; Low Technicality, as might be expected, is also associated with item Mastery.

16. The several item characteristics studied show a complex network of interrelationships, a close analysis of the data presented in this regard indicating certain subpatterns, such as one connecting placement in the Low-Low quadrant with Psychological Foundations, with High Technicality, with Behaviorist-Connectionist Aspects of the Teaching-Learning Process, and with the General Learning Procedure Aspect.

Cross-Group Correlations

17. Based on judgments applied to the Proposals items, the consistency and significance of the Mastery, Pre-Teaching, and In-Teaching ratings of the present group of teachers were examined in terms of their correlations with ratings of the same items by previous groups employing criteria of Comprehension, Importance, and Application, as reported below.

18. Mastery ratings by the present group show moderately high correlations with Comprehension ratings by previous groups of Urban, Suburban, and Rural teachers for Psychological Foundations items and for Educational Applications items separately as well as for All Items combined, the correlation coefficient on the combined items of the present group with the combined previous group being .743.

19. The previously determined marked superiority of correlations of In-Teaching with Mastery ratings over correlations of Pre-Teaching with Mastery ratings by the present group is even more strikingly evidenced when either Comprehension ratings or Importance ratings of the previous teacher groups are substituted for Mastery ratings of the present group; the relative difference is clearly present but less sharp when Application ratings are substituted for the Mastery ratings.

20. In all instances of correlation of Pre-Teaching and In-Teaching ratings by the present group with Comprehension, Importance, and Application ratings by the previous teacher groups the correlation for Educational Applications items is lower than for the corresponding correlation for Psychological Foundations items, possibly because of the smaller number of items in the former category.

21. With exception in several particulars, the correlations between the stated criterial ratings by present and previous teacher groups are similar, though slightly lower, when ratings of a group of eight supervisors and teacher trainers are substituted for the previous groups of teachers, the most notable exception being the reversal in position of the Pre-Teaching and In-Teaching correlations in the case of Staff ratings of the Importance and the Application of the Proposals items.

22. In reference to Topics in Educational Psychology, correlations between Mastery and In-Teaching ratings with Immediate Need to study the topics are higher than those relating these criteria with ratings of Long Range Need, while the opposite is true for the Pre-Teaching criterion, whose correlations, as well, are generally lower than those for Mastery or In-Teaching ratings.

23. Mastery and In-Teaching ratings by the present teacher group are fairly strongly related to Immediate Need ratings of Topics by previous groups, but Pre-Teaching ratings and Long Range ratings show weak, though positive, correlations.

24. Cross-group ratings of Topics items do not stand up as well as comparable correlations of ratings of Proposals items.

25. Correlations of ratings of Topics by present teachers with ratings by curriculum workers show relationships that are generally similar to correlations between ratings of present teachers with those of previous teachers.

26. With regard to the factor of the amount of experience on the part of curriculum workers, the More experienced yield somewhat higher correlations for the In-Teaching criterion and somewhat lower correlations for the Pre-Teaching criterion.

27. With respect to Teaching Abilities, In-Teaching Correlations are considerably higher than Pre-Teaching correlations in cross-group relations involving Mastery and Importance item ratings.

28. Correlations among criteria based on ratings by two different course groups of the Teaching Abilities are so similar as to provide striking evidence of the dependability of group judgments of the items.

29. With small exception, relationships among criterial ratings tend to be essentially similar across item types, most notably so in respect to the almost universally corresponding superiority of correlations entailing In-Teaching over Pre-Teaching ratings.

30. Coupled with the tendency toward low correlations when ratings of the Long Range Need to study Topics are involved, the above alluded-to finding suggests that teacher judgments of the various items are likely to be most dependable in reference to present training needs rather than to past or future ones.

31. The generally strong correlations associated with the Mastery ratings of the present group compared with various criterial ratings of previous groups accent the pervasive role of Mastery in affecting other criterial judgments in much the same way, if inversely, that the technicality of an item was found to affect other item characteristics and ratings, as depicted earlier in this summary.

Group and Criterion Means and Differences

32. The means and standard deviations of the mean item ratings for various item types, criteria, and groups are presented in order to cast additional light on the relations among the several types of ratings rendered by groups previous to the present group.

33. With regard to the Proposals items, the Importance of the item is rated considerably higher, on the average, than either its Comprehension or Application in both the Psychological Foundations and Educational Applications categories, with Application generally being rated lower than Comprehension.

34. The Staff group rate the Application of items of both categories sharply lower than do Teachers, while roughly approximating the Teacher group with respect to ratings of Comprehension and Importance.

35. When compared with Psychological Foundations items, Educational Applications items of the Proposals type are rated higher on all criteria by the previous groups.

36. The mean item ratings of the Combined Teacher group vary appreciably less for the Importance criterion than for the Comprehension or Application criteria, whereas the Application criterion yields the least variability in mean item values when applied by the Staff group.

37. With respect to the Topics items as rated by the previous groups, the Long Range need to study items is consistently rated higher than the Immediate need, the difference being greater for Psychological Foundations items than for Educational Applications items.

38. End-of-course ratings of both Immediate and Long Range need to study Topics items are appreciably higher than beginning-of-course ratings.

39. The Less experienced Curriculum Workers rate the Psychological Foundations Topics items somewhat higher than their More experienced colleagues: they rate the Educational Foundations items a trifle lower.

40. With regard to the variability of distributions of mean item ratings for the Topics, the Psychological Foundations values tend to be less variable than those for Educational Applications, and the More experienced Curriculum workers yield more variable ratings than do the Less experienced.

41. The Importance ratings of Teaching Abilities items tend to be far superior to Mastery ratings for both categories of items and for both Teacher groups, namely those enrolled in a course in Advanced Educational Psychology and those enrolled in a Seminar in Elementary Education.

42. Notwithstanding the differences in the composition of the several previous groups of Teachers and Staff, the means and standard deviations of the item rating distributions for the three types of items present an essentially consistent pattern of relationships.

43. The obtained differences between means of item ratings by selected previous Teacher and Staff groups judging the three types of items by the several criteria were found to show in almost all instances a statistical significance of 99 chances in 100 or better.

Cross-Group Criterion Dependability Correlations

44. Employing the cross-group correlation of mean item ratings according to the same criterion as an index of minimal reliability or dependability, Proposals item ratings on Comprehension and Importance between teacher-teacher and teacher-staff groups were found to be highly dependable.

45. For the Application criterion, correlations between teacher-teacher groups, while still high, were found to be slightly lower than those for Comprehension and Importance, and the Application correlations between teacher-staff groups were found to be a little lower than those for the teacher-teacher groups.

46. Dependability correlations of ratings of Topics in Educational Psychology by teacher-teacher and teacher-curriculum worker groups proved to be quite high for the Immediate Need to study criterion; they were somewhat lower for the Long Range Need criterion, especially as applied by teacher-curriculum worker paired groups.

47. Cross-group ratings of Immediate Need to study Topics made at the end of a course in Advanced Educational Psychology show lower dependability correlations than those executed at the beginning of the course.

48. With respect to cross-group correlations of ratings of Abilities items, the Mastery criterion was found to yield a somewhat higher dependability than the Importance criterion.

49. The consistently high to moderately high cross-group correlations employing the same criterion, barring rare exceptions, augurs well for the use of even small groups in attempts to utilize judgments of teachers and other educational personnel in establishing views concerning elements in the preparation of teachers.

Illustrative Use of an Item Data Bank

50. Referring to appendixes showing mean item values derived from ratings by various teacher or staff groups in accordance with a number of criteria, together with a key to the categories under which items had been classified with respect to designated item characteristics, illustrations are given to show the kindsof information made available by procedures employed in the present study.

51. The informative illustrations covering three of the Proposals items are seen to reflect the commonalty of ratings by urban, suburban, and rural teacher groups at the item level; they reveal sharply lower estimates by Staff of teacher application of psychoeducational ideas than those rendered by the teachers themselves; and they indicate a notable increase in criterial ratings of Comprehension, Importance, and Application of ideas in the course of the semester's work in Advanced Educational Psychology, while at the same time pointing up individual item variations.

52. The illustrative collation of information about individual items pointed the way to further use of the item data bank, while at the same time evoking certain questions concerning the significance of the findings and the use to which they may be put.

IMPLICATIONS AND FUTURE RESEARCH DIRECTIONS

Implications of the study may be drawn along several lines.

The feasibility and the oualified dependability of the demonstrated procedures for gathering judgments on selected training elements in accordance with designated criteria open up a broad strategy in teacher education curriculum selection and placement. This does not mean that ratings assigned to items by any given group necessarily signify the items that should be chosen. Rather, the information may be used as a basis for further assessment, particularly as professionals occupying various educational roles are consulted and their judgments subjected to combined thinking. Moreover, aside from the resultant choices, knowledge of the perceptions of the persons concerned provides important information regarding the motivational and related problems that may have to be faced as training programs are implemented.

Some inferences may be drawn from the study as to the considerations that qualify the dependability of ratings, thus providing a modicum of guidance as to certainty of results under given conditions, and as to needed further research on dependability factors. Thus, the higher dependability of In-Teaching ratings representing here-and-now judgments as contrasted with past-condition Pre-Teaching judgments or with future-condition Long Range need-to-study judgments suggests the necessity of fortifying rating procedures of the past or future variety. Similarly, while the number of respondents required to yield moderately high dependability correlations was found to be surprisingly low,

increased numbers of judges were found to be required, as might be expected, where individual items rathert han groups of items were under consideration.

The tendency toward commonalty of findings among varied teacher groups, while requiring verification through further research on a wider sampling basis, has implications for procedure as well as for substantive interpretation. Procedurally, sampling problems may prove easier to handle if the commonalty findings are essentially confirmed. The existence of commonalty in discovered respects has sociological significance in its own right, and may affect decisions concerning the extent of need for differentiations in teacher education curriculums. To be sure, the search for differences in teachers working in different settings should go forward. In any case, however, a knowledge of similarities and of differences in attitudes of various groups of teachers should pro ve helpful in making curriculum decisions.

Knowledge concerning the points of difference and similarity in the views of teachers as compared with other school personnel - for example, supervisors or teacher trainers - is obviously important in planning training and retraining programs. When teachers differ from other personnel in stating the extent to which they think psychoeducational ideas are being applied to teaching practice, while agreeing on the importance of the ideas for successful teaching, it is time for the two groups to sit down together to verify the extent of the discrepancy, and to consider what can be done about it.

A further implication of the study relates to the very question of

the transformation of ideas into teaching practice. The study has indicated that ideas, expressed in the form of the presented items, are generally highly valued by the respondents; hence low valuation cannot explain the relatively numerous instances of low application rating. What seems to emerge from the findings of the study is the likelihood that high technicality and lack of comprehension of the stated idea is a major deterrent to its application. If this is so, more rather than less professional knowledge is required to enhance the likelihood of good teaching. The form of presentation of knowledge required for behavioral or performance mastery was not directly subjected to inquiry in the present study, but it may be inferred from the findings that, important as they may be, non-cognitive forms of training should probably not be furthered at the expense of cognitive professional knowledge if teaching practice is to be made more mindful.

Other inferences from the findings suggest the placement in the Pre-Teaching period of much of the training material in foundational Psychology requisite for an informed application of educational procedures. At the same time there is indirect evidence to support the suggestion that teaching practices need to be reexamined in the light of psychological principles during the In-Teaching period. Although evidential gaps need to be supplied in the line of reasoning, it appears that the lower dependability correlations of ratings relative to the Pre-Teaching period and to Long Range need to study topics reflect some confusion, on the one hand, as to how to functionalize

foundational Psychology, and on the other hand, as to how to establish a long-range image of the teacher as a fully qualified professional. It is to be hoped that further studies of desirable professional competencies at the several stages of readiness and in-service growth of teachers will serve to clarify the problem of meeting the training needs of any given group of teachers, but also of different groups whose aspirations and expectations relate to varying levels of mastery, including those who in addition to having a rich repertoire of teaching skills, procedures, and devices are fully mindful of the underlying ideas that determine their proper use. Also included may well be the short-term teacher whose tenure is not likely to extend beyond five or six years, and the paraprofessional.

As a preliminary exploration of an approach to judgment utilization in studying teaching competencies, the present study did not systematically survey either teaching grade level or subject matter area. In this regard it would seem desirable to pursue two questions:

1. How do respondent teacher groups at different grade levels or of different subjects perceive the various mastery elements?
2. Can the elements themselves be arranged in a hierarchical, interconnected structure ranging from commonly applicable, general masteries to those that are of specialized concern?

The implication of further study along these lines may have import for a number of vexing issues with regard to the proliferation of specialized course work in teacher education as well as the often-found separation of general grasp from particularized application.

Extensions of the techniques employed in the present study may be made along additional lines. It is evident that the inquiry can be pointed in any chosen direction by writing the criterial questions

appropriately. Thus, some data of a scattered nature have been gathered by the investigator depicting the perceived contributions of various components of teacher education programs to masteries, attitudes, etc. on the part of teachers. Among the components explored are: undergraduate preparation versus in-service supervision and experience: foundations courses versus student teaching: courses in Psychology and Educational Psychology versus courses in Methods of Teaching; contributions of a course in Advanced Educational Psychology to insights and attitudes versus insights and skills: and several others. This list could be extended to include specific training devices such as tutorial laboratory or field experience, videotape observations, microteaching, and innumerable other packaged and unpackaged proposals for the inculcation of teaching competencies.

Without going into the matter directly, the study may be viewed as opening up the readiness and staging question with respect to the nature and timing of such diverse training activities as formal instruction, independent study, incorporation of teaching content, attitudinal field experiences, sensitivity sessions, in short, whatever may be necessary to make the whole teacher. The study has pointed to certain factors that appear to be associated with Pre-Teaching versus In-Teaching placement of training items, but the elements were hardly differentiated according to a cognitive, affective, actional spectrum, being all essentially cognitive in nature. Nonetheless, the study does set a pattern of inquiry in which such differentiated components of functional mastery may be examined.

The suggested utilization of subjective judgments, albeit accompanied by empirical analysis, would seem to be in conflict with the current interest in the objective determination of performance objectives. The writer's view is that the two modes of investigating teaching competencies are complementary, not competing, in their purposes and functions, provided they share in ultimate humanistic educational goals and in acknowledging the ubiquity of underlying human growth processes.

Although educational objectives need to be selected in terms of all the major aspects and sectors of the organism or personality, the Krathwohl, et. al. taxonomy of educational objectives in the affective domain[1] offers a useful, though somewhat clinically subtle, model of the range of behavioral aspects of the organism involved in psychological change processes. Thus, the individual is seen to progress from a relatively passive awareness, through valuing, to internalization. The development of stated masteries in teaching may be expected to go through these process stages. Whether subjective judgments are employed or objective manifestations sought, the student of professional competencies may well think in terms of these stages.

And so we find ourselves face to face again with the readiness and staging problem. What should the early stages of training seek to accomplish? What orientational awarenesses as distinct from consummate skills? What knowledge specifics as contrasted with generic insights? What labelled beliefs as against unconscious predispositions? What mix of these and other psychological entities should mark the successive

1 Krathwohl, D.R. et al. Taxonomy of Educational Objectives: Handbook II. Affective Domain. McKay, 1964.

stages of training? As these objectives are spelled out and at least tentatively assigned their place in a total teacher training and growth program extending from, let us say, the sophomore year through the first three years of responsible teaching, what manifestations may be looked for as marking their accomplishment?

Over thirty years ago, by listing and securing reactions concerning over a thousand teaching activities, the Charters and Waples Commonwealth Fund Study[1] raised unfulfilled hopes that efforts to spell out the ingredients of sound professional teacher training might at last succeed, to match perhaps the apparent successes of training in medicine and other professions. There is much that is still suggestive, if not directly useful, in this grand attempt to scientize teacher training, but the contemporary problem is now seen to require far more sensitivity to the subtleties of psychological development and the complexities of human change processes. We can do worse than match the analyses of medicine, engineering, and accountancy as practiced, as the basis for medical, engineering, and accountancy training, but we can also do better. At least we can make a beginning at doing better by furthering techniques for bringing careful, itemized, and structured group thinking, within a sociologically and psychologically sophisticated framework, to bear on the selection and placement of teacher training elements and on the determination of the most propitious means of achieving their mastery.

1 Charters, W. and Waples, D. The Commonwealth Teacher-Training Study. Chicago Press, 1939.

Appendix 1. Teaching Abilities

Consider the ability to:

1. Arouse initial pupil interest and attention through a variety of devices.
2. Sustain intrinsic pupil motivation in relation to learning tasks.
3. Adjust to the learner's readiness to cope with the material to be presented.
4. Encourage learners to attack learning tasks in their own way.
5. Channel the pupil's attention toward specific learning objectives.
6. Be aware of pupils' feelings in response to success and failure.
7. Create a classroom climate conducive to keeping anxiety at a low level.
8. Create interpersonal relations among the pupils conducive to enhancing self image.
9. Develop pupil skills in working together on common tasks.
10. Be aware of sociocultural differences in needs and interests of pupils.
11. Evidence concern for the pupil's personality outside of instructional needs.
12. Analyze and break down difficult material into manageable elements.
13. Draw the pupil's attention to concepts and relationships in topics studied.
14. Translate abstract and intangible ideas into concrete and understandable terms.
15. Sequence and group items in such a way as to further meaningful grasp.
16. Use questions and materials so as to achieve participation of most of the pupils most of the time.
17. Provide for feedback as an ongoing source of information as to pupil grasp.
18. Select and, where appropriate, prepare tests and other evaluative instruments.
19. Provide reinforcement by appropriately timed and distributed confirmation of correct responses.
20. React to pupil responses in a manner to help him feel comfortable in making tries even when uncertain.
21. Introduce problems or thought-provoking questions or tasks.
22. Teach concepts by presenting and analyzing positive and negative instances.
23. Help pupils develop inner mental structures for incorporating cognitive material.
24. Guide pupils toward discovering answers and solutions on their own.
25. Group pupils for individualized learning of sequential skills.
26. Teach pupils to think both creatively and critically as well as systematically.
27. Manage classroom routines with easy efficiency.
28. Control class behavior and that of non-seriously-disturbed pupils.
29. Adjust teaching to the needs of physically handicapped children.
30. Adjust teaching to the needs of intellectually retarded children.
31. Adjust teaching to the needs of intellectually superior children.
32. Adjust teaching to the needs of quiet, withdrawn children.
33. Adjust teaching to the needs of hyperactive, disruptive children.
34. Teach English and other subjects to Non-English speaking children.
35. Make classroom diagnoses of children with learning disabilities.
36. Set up classroom remedial programs for children with learning disabilities.
37. Involve parents cooperatively in their children's education.
38. Work effectively with paraprofessional and other teacher aides.
39. Work with supervisors in educational evaluation and innovation.
40. Engage in small scale or ancillary research on teaching problems.
41. Provide the necessary enriched mastery of curriculum knowledge and skills.
42. Derive satisfaction from working with children.
43. Derive satisfaction in developing content in lesson and unit planning.
44. Derive satisfaction in planning and executing instructional methods.

Appendix 2. Topics in Educational Psychology

A. THE BASIC TEACHING-LEARNING MODEL

1. A Model for Working with Teaching-Learning Tasks

1 1.1 Organizing one's thoughts about teaching and learning
2 1.2 Analysis of teaching into workable sized units
3 1.3 The central components of a teaching-learning enterprise: objectives, the learner, the teacher, curriculum, methods
4 1.4 Secondary components: school, familial, and community surroundings
5 1.5 Cybernetic features of the teaching-learning process: transactions, feedback, decision controls
6 1.6 Planning a teaching unit in terms of the teaching-learning model

2. Psychological Clarification of Educational Objectives

7 2.1 Diversified objectives as stated in syllabi and courses of study
8 2.2 Translation of objectives in terms of aspects of the organism
9 2.3 Relation to developmental tasks and crises, and to mental health goals
10 2.4 Cognitive, affective, and psycho-motor taxonomies of educational objectives
11 2.5 Interrelations among objectives, types of learning, and school subjects
12 2.6 Concept of figure and ground in viewing objectives: primary, associate, and concomitant outcomes of learning activities
13 2.7 Sharing the awareness of objectives with the learner

3. The Learner as Modifiable Material Manifesting Growth and Motivation

14 3.1 The concept of readiness for learning
15 3.2 The learner as "material" to be modified: constitutional factors
16 3.3 Forces for change in the learner: sources of motivational arousal and direction; plans and the structure of behavior
17 3.4 Contributions from the psychology of development
18 3.5 The analysis of specific background masteries, learning sets, etc. in relation to subject matter or skills to be learned

4. Teacher Roles, Pupil Interaction, Interpersonal Relations

19 4.1 Instructional and non-instructional roles of teachers
20 4.2 Analysis of teacher-pupil interactions
21 4.3 Pupil interactions and interpersonal relationships: classroom climate
22 4.4 The teacher as a person: teaching styles and personality expression
23 4.5 Factors affecting management and control in the classroom
24 4.6 The teacher's role in research and development programs

Topical Outline - 2

5.	School and Community Settings for Teaching and Learning.	
25	5.1	The problem of logistics in distributing the resources for learning
26	5.2	The organization of the school: the arrangement of learners and of teaching staff
27	5.3	The climate of the school: administrative practices and relationships as affecting the teaching-learning enterprise
28	5.4	Community influences on goals, pupils, teachers, curriculum, and teaching methods.
6.	Curricular Aspects of the Teaching-Learning Process	
29	6.1	Curriculum concepts and problems: selection, organization, and sequencing
30	6.2	Behaviorist-connectionist contributions to curriculum practice
31	6.3	Psychodynamic and developmental psychological influences on curricular thinking
32	6.4	The cognitive approach to curriculum organization
33	6.5	The structure of the disciplines as related to the content of the school subjects
34	6.6	Illustrative curriculum reformulations
7.	Media for Presenting Material and Directing Responses	
35	7.1	Sources of curricular enrichment in and out of school
36	7.2	The concept of a total teaching-learning, communication, transactional system transmitting and processing information and other signals
37	7.3	The relation of the older and newer media to objectives, content, and instructional procedures
38	7.4	Contributions of human and non-human modes of presentation and direction: the role of feedback in each
39	7.5	Guiding principles in the use and evaluation of media and materials
8.	Improving Instructional Procedures	
40	8.1	Checking physical factors in the learner and his environment
41	8.2	Basic conditions of S-R learning and their implications for teaching: reinforcement and feedback
42	8.3	Patterns of part-whole relationships in the presentation of materials
43	8.4	The sequencing of elements to enhance facilitation and to retard inhibition
44	8.5	Ways of strengthening retention and reducing forgetting: the use of mediators, distribution and pacing; overlearning and review
45	8.6	The place of models, identification processes, and social and cultural influences in learning
46	8.7	Modes of achieving meaningfulness: cognitive structuring
47	8.8	Teaching for generalization and transfer
48	8.9	Teaching through discovery and independent learning
49	8.10	Individualizing learning: learning styles
50	8.11	Creating an atmosphere for learning

Topical Outline - 3

9. Provision for Feedback in the Teaching-Learning Process

51 9.1 Feedback in systems theory applied to teaching and learning
52 9.2 Ways of providing feedback to the learner and about the learner in the course of learning
53 9.3 Feedback in relation to objectives, types of learning, teaching procedures, and instructional media
54 9.4 The use of feedback in the evaluation of educational programs
55 9.5 Interaction between practice and research through mutual feedback

B. DIFFERENTIATIONS

10. Differentiations According to the Various Types of Learning

56 10.1 Signal learning and stimulus-response learning: conditioning
57 10.2 Chaining and verbal association: perceptual- motor and skill learning
58 10.3 Multiple discrimination
59 10.4 Concept and principle learning
60 10.5 Problem-solving, discovery, creativity
61 10.6 Generalized vs. differentiated principles of classroom learning

11. Differentiations According to Aspects of the Person Affected

62 11.1 The cognitive sphere: sensory, perceptual, imaginal, ideational
63 11.2 The motivational sphere: attitudes and beliefs, interests and preferences, the value system, needs and motivational patterns
64 11.3 The social sphere and the self: socialization and conduct, self and ego system, interpersonal relations
65 11.4 The emotional and adjustive sphere: affective and emotional qualities, temperament, psychosexual development, adjustive mechanisms and coping style
66 11.5 The sphere of action and skilled performance
67 11.6 The broadened use of learning principles to cover the whole person

12. Applying and Adapting Instructional Programs to Deviations in Learners

68 12.1 An organismic view of exceptionality and individual differences
69 12.2 Physical and neurological exceptionalities
70 12.3 Intellectual and achievement exceptionalities
71 12.4 Social-economic-cultural variations
72 12.5 Conduct and personality deviations
73 12.6 A survey of problems affecting persons with exceptionalities

C. AMPLIFICATION

13. Educational Change Models and Educational Psychology

74 13.1 Relationships between models, theories, hypotheses, constructs, principles, and other elements in research, problem solving, and practice
75 13.2 A problem-resolving model for attacking psycho-educational problems
76 13.3 The social psychology of educational innovation and change
77 13.4 Psychotherapeutic approaches as educational change models
78 13.5 A new discipline centering on humanistic change processes as a possible alternative to Educational Psychology

Appendix 3. Psychoeducational Proposals

1. In planning and implementing a unit of learning, include provision for the diagnostic analysis of progress and for selective remediation and review.

2. To the extent feasible, capitalize on a knowledge of the learner's profile of mental capabilities, as well as on an awareness of discrepancies between his intellectual potential and functioning.

3. Adjust to the learner's level of readiness for learning a particular subject by providing gap-filling helps and prompts.

4. In helping pupils in their attack on learning tasks, encourage them to employ strategies likely to be effective in the light of our knowledge of common and idiosyncratic learning styles.

5. Without avoiding competition in its less unsavory forms entirely, attempt to direct the learner's efforts toward an intrinsic confrontation with the mastery of the learning task as set for and by himself.

6. In planning the motivation of a learning unit, consider both the arousing of the interest and attention of the pupil and the channelling of the aroused "energy" toward the achievement of the specified learning objectives.

7. Where motivation among pupils appears to be low, review the appropriateness of the curriculum and of teaching procedures to the developmental needs of the age group involved.

8. In setting learning tasks and expected standards of achievement, take into account the learner's typical aspiration level, and how it fluctuates in the face of success and failure.

9. In assessing the contribution of the educational program to the basic personality development of pupils, apply criteria derived from Erikson's analysis of developmental "crises" encountered at the several stages of growth.

10. In attempting to affect the motivational and value systems of pupils, create an interpersonal atmosphere in which the pupil feels warmly and honestly supported by the teacher and his peers as a person capable of directing his own behavior.

11. To the extent feasible, control the learner's anxiety level to the point of stimulating sufficient activity arousal, but keep it low enough to avoid interference with productive behavior.

12. Wherever appropriate, adapt the roles played by the teacher, both within and outside his specific instructional functions, to the wider objectives and circumstances of the teaching-learning enterprise.

Appendix 3 - 2 Form A

13. In attempting to establish the most effective rapport between the teacher and pupils, consider the behavioral or personality styles of both the teacher and the individual pupils.

14. Review the emotional climate and the way the school is governed in the light of the mental health needs of the learners, both with a view toward minimizing maladjustive trends and maximizing productive, self-actualizing behavior.

15. Consider how the wider culture and the subculture to which the learner belongs may affect his learning.

16. Note how the behavior and relationships of parents and other persons in the pupil's environment affect his learning, and take such measures related to the observed condition as may be appropriate and feasible.

17. In planning a teaching unit, consider the underlying cognitive structure of the subject matter to be taught.

18. Consider the part that the hierarchical organization of concepts at supra-, co-, and subordinate levels plays in the comprehension and retention of words and concepts.

19. In planning a unit, search out and utilize rule patterns that underly the basic acquisition of language and other forms of knowledge or complex behavior.

20. Temper the application of teaching-learning principles by the experience of the ongoing situation in which they are to be applied.

21. Within the framework of the proposed principles - and on occasion, aside from their dictates - experiment with variations in curriculum materials and approaches as a possible basis for the discovery of improvements and as a means for sustaining interest in teaching.

22. In setting the outcomes to be achieved in the course of a specified learning unit, translate the stated objectives into psychological terms such as are stated in published taxonomies of cognitive and affective educational objectives.

23. Along with the immediate primary instructional objectives to be achieved through a lesson or learning unit, consider the accomplishment of secondary outcomes in the form of associated cognitive and concomitant psychodynamic effects of instruction.

24. Consider the facilitating and interfering effects background learning can have on the learning of material to be included in a particular teaching unit or episode.

Appendix 3 - 3 Form A

25. In teaching chains of S-R connections, consider ways of strengthening the several connections between the links, as well as the linkage of the individual stimuli with their respective responses.

26. Where materials need to be learned with a view toward later free recall, arrange the presentation of items so as to facilitate clustering and subjective organization.

27. Analyze complex skills to be learned in terms of stability or movement on the part of the learner, of the environment, and the relation between the two.

28. In analyzing the acquisition of conditioned learning, note distinctions between instances where there are shifts from one S to another S with the R remaining the same and those where the shift is from one R to another R with the S remaining the same.

29. In teaching complex skills and other forms of learning, consider the completeness, immediacy, and frequency of feedback information.

30. Viewing the teaching-learning process as a communication system, consider the role of the several instructional media, including live media such as the teacher, the pupils, and ancillary teaching personnel, that might serve as information or channelling sources.

31. In analyzing a skill to be learned, note the continuous interplay of input, output, and feedback processes.

32. Take into account the belief that graphic materials supply important supportive meanings to verbal presentations.

33. In an effort to take individual differences among pupils into account, consider the logistics of delivering individually suited learning experiences in terms of differentiation in instructional materials and in teaching procedures and devices.

34. Consider the effects of generalization in the institution of S-R connections and in their subsequent application to new situations.

35. When it is desired that a given response be weakened or eliminated, avoid the occurrence of concomitant reinforcement, in keeping with the principle of extinction.

36. Provide for appropriately timed and distributed confirmations of correct responses in learning situations.

Appendix 3 - 4

Form A

37. Consider the applicability of the principles of classical and instrumental conditioning to the motivational and emotional aspects of the teaching-learning process.

38. In multiple discrimination learning, note the relative emphasis needed on differentiating between S's as against differentiation between R's.

39. Consider how mediation processes can facilitate learning and retention.

40. In recognition of the fact that reception learning need not be rote learning, employ both reception and discovery learning in ways that reflect meaningful thought.

41. Once the common attributes of particulars have been identified in the attainment of a concept, test the learner's grasp of the concept by checking on his ability to determine its presence or absence in new instances presented to him.

42. Employ advance organizers in aiding the learner to get set structurally for cognitive experience to come.

43. Consider the part that language and labelling plays in comprehension and retention of knowledge, principles, mental processes, and skills.

44. Set up learning activities and react to student responses in a manner that will help students to feel comfortable in making tries at acceptable responses, including erroneous ones from which they may nonetheless learn.

45. In applying problem solving to learning endeavors, review the application of Dewey's five-phase analysis of the process and examine the implications for learning of psychodynamic incursions into the process.

46. In learning by the problem-solving method, provide prompts where the learner would otherwise be blocked from the opportunity to proceed with needed practice in one or another phase of the total process.

47. Attempt to improve the pupil's ability to discover solutions for himself and to devise heuristic methods in attacking problems.

48. With particular reference to non-intellectual, psychodynamic aspects of personality change, consider the applicability in learning situations of such Freudian concepts as identification, internalization, and incorporation.

Appendix 4. Mean Rating on Each of Three Criteria for Each Item and Its Subgroup Placement on Item Characteristics: Teaching Abilities

	Criteria				Item Characteristics				
NO	MAS	PRE-T	IN-T	DPI	NO	A	B	C	D
1	2.40	2.40	2.70	-0.30	1	1	2	1	4
2	2.50	2.10	2.70	-0.60	2	1	2	3	4
3	2.30	2.20	2.90	-0.70	3	1	1	1	3
4	2.10	2.30	2.50	-0.20	4	1	2	2	3
5	2.10	2.10	2.50	-0.40	5	1	1	4	2
6	2.60	2.30	2.60	-0.30	6	1	2	1	5
7	2.40	2.40	2.70	-0.30	7	1	2	1	5
8	2.30	2.20	2.70	-0.50	8	1	2	1	5
9	2.40	2.10	2.70	-0.60	9	1	2	3	5
10	2.30	2.60	2.90	-0.30	10	1	2	1	10
11	2.40	2.40	2.60	-0.20	11	1	2	1	2
12	2.50	2.30	2.60	-0.30	12	1	2	1	6
13	2.60	2.40	2.70	-0.30	13	1	2	1	8
14	2.60	2.40	2.60	-0.20	14	1	2	1	8
15	2.60	2.10	2.50	-0.40	15	1	2	4	6
16	2.70	2.20	2.70	-0.50	16	1	2	1	5
17	2.60	2.40	2.60	-0.20	17	1	1	1	3
18	2.30	2.40	2.50	-0.10	18	1	1	2	2
19	2.10	1.80	2.40	-0.60	19	1	1	4	9
20	2.60	2.00	2.60	-0.60	20	1	2	3	5
21	2.10	2.00	2.10	-0.10	21	1	2	4	8
22	1.80	2.30	2.10	0.20	22	1	1	2	8
23	2.10	2.00	2.20	-0.20	23	1	1	4	8
24	2.30	2.00	2.50	-0.50	24	1	2	4	8
25	2.00	2.10	2.50	-0.40	25	1	2	4	10
26	2.30	2.50	2.70	-0.20	26	1	2	1	8
27	2.60	2.00	2.80	-0.80	27	1	2	3	7
28	2.80	2.10	2.80	-0.70	28	1	2	3	7
29	1.30	2.00	2.10	-0.10	29	1	2	4	10
30	1.70	2.20	2.40	-0.20	30	1	2	2	10
31	2.00	2.20	2.30	-0.10	31	1	2	2	10
32	2.00	2.30	2.30	0.00	32	1	2	2	10
33	2.10	2.30	2.40	-0.10	33	1	1	2	10
34	1.40	2.30	2.40	-0.10	34	1	2	2	10
35	1.80	2.10	2.30	-0.20	35	1	2	4	10
36	1.90	1.90	2.60	-0.70	36	1	2	3	10
37	2.10	1.50	2.60	-1.10	37	1	2	3	5
38	1.70	1.60	2.70	-1.10	38	1	2	3	5
39	1.90	1.80	2.70	-0.90	39	1	2	3	2
40	1.70	2.00	2.20	-0.20	40	1	2	4	1
41	2.30	2.30	2.60	-0.30	41	1	2	1	6
42	2.90	2.20	2.60	-0.40	42	1	2	1	3
43	2.30	2.50	2.40	0.10	43	1	2	2	6
44	2.40	2.50	2.50	0.00	44	1	2	2	7

Appendix 5. Mean Ratings on Each of Three Criteria for Each Item and Its Subgroup Placement on Item Characteristics: Topics in Educational Psychology

	Criteria					Item Characteristics			
NO	MAS	POS-T	IN-T	DPT	NO	A	B	C	D
1	2.40	2.80	2.30	0.50	1	2	2	2	1
2	2.60	2.40	2.50	-0.10	2	2	2	3	6
3	2.20	2.80	2.30	0.50	3	2	1	2	1
4	1.90	2.30	2.80	-0.50	4	2	2	1	1
5	2.20	2.60	2.50	0.10	5	2	1	1	1
6	2.30	2.70	2.40	0.30	6	2	2	1	1
7	1.90	2.50	2.30	0.20	7	2	2	2	2
8	1.90	2.20	2.60	-0.40	8	2	1	3	2
9	1.90	2.20	2.70	-0.50	9	2	1	3	2
10	2.10	2.50	2.30	0.20	10	2	1	2	2
11	2.00	2.30	2.30	0.00	11	2	2	2	2
12	1.90	2.10	1.90	0.20	12	2	2	4	2
13	2.30	1.80	2.20	-0.40	13	2	2	4	2
14	2.40	2.40	2.60	-0.20	14	2	1	1	3
15	2.00	2.10	2.40	-0.30	15	2	1	3	3
16	2.10	2.10	2.70	-0.60	16	2	1	3	2
17	2.10	2.60	2.00	0.60	17	2	1	2	3
18	2.20	2.10	2.20	-0.10	18	2	1	4	3
19	2.40	2.20	2.60	-0.40	19	2	2	3	5
20	2.40	2.00	2.70	-0.70	20	2	2	3	5
21	2.10	2.10	2.50	-0.40	21	2	2	3	5
22	2.20	2.10	2.60	-0.50	22	2	2	3	5
23	2.50	2.30	2.70	-0.40	23	2	2	1	3
24	1.60	1.90	1.70	0.20	24	2	2	4	5
25	1.90	1.70	2.10	-0.40	25	2	2	4	1
26	1.80	1.30	2.50	-1.20	26	2	2	3	1
27	2.20	1.70	2.40	-0.70	27	2	2	3	5
28	2.20	1.80	2.60	-0.80	28	2	2	3	2
29	2.50	2.30	2.40	-0.10	29	2	2	1	6
30	1.70	2.30	1.80	0.50	30	2	1	2	9
31	2.00	2.40	2.20	0.20	31	2	1	2	4
32	2.40	2.50	2.00	0.50	32	2	2	2	6
33	1.90	2.20	2.10	0.10	33	2	2	4	6
34	1.50	1.90	2.10	-0.20	34	2	2	4	6
35	2.20	2.10	2.60	-0.50	35	2	2	3	6
36	2.00	2.20	2.00	0.20	36	2	1	4	1
37	2.00	2.30	2.50	-0.20	37	2	2	1	6
38	2.20	2.30	2.70	-0.40	38	2	1	1	1
39	2.00	2.30	2.40	-0.00	39	2	2	1	6

Appe ndix 5. (Continued)

Criteria						Item Characteristics			
NO	MAS	PRET	IN-T	DPI	NO	A	B	C	D
40	2.10	2.10	2.60	-0.50	40	2	2	3	3
41	2.10	2.50	2.00	0.50	41	2	1	2	9
42	2.20	2.00	2.10	-0.10	42	2	1	4	7
43	2.00	2.20	2.30	-0.10	43	2	1	4	6
44	2.10	2.50	2.50	0.00	44	2	1	1	7
45	2.00	2.40	2.30	0.10	45	2	1	2	4
46	2.30	2.50	2.10	0.40	46	2	1	2	8
47	2.20	2.30	2.40	-0.10	47	2	1	1	7
48	2.20	2.40	2.60	-0.20	48	2	2	1	7
49	2.20	2.40	2.80	-0.40	49	2	1	1	10
50	2.30	2.40	2.60	-0.20	50	2	2	1	4
51	2.20	2.10	2.20	-0.10	51	2	1	4	1
52	2.10	2.40	2.30	0.10	52	2	1	2	3
53	2.20	1.80	2.40	-0.60	53	2	1	3	2
54	1.90	2.00	2.10	-0.10	54	2	2	4	2
55	1.60	1.90	2.00	-0.10	55	2	1	4	1
56	1.80	2.40	1.70	0.70	56	2	1	2	9
57	1.70	2.50	1.90	0.60	57	2	1	2	9
58	1.70	2.40	1.90	0.50	58	2	1	2	7
59	2.20	2.50	2.00	0.50	59	2	1	2	7
60	2.40	2.50	2.50	0.00	60	2	1	1	8
61	2.30	2.10	2.00	0.10	61	2	1	4	7
62	2.80	2.70	2.10	0.60	62	2	1	2	8
63	2.40	2.40	2.70	-0.30	63	2	2	2	4
64	2.20	2.50	2.60	-0.10	64	2	1	1	3
65	2.10	2.40	2.60	-0.20	65	2	1	1	3
66	2.00	2.20	2.40	-0.20	66	2	1	3	9
67	2.00	2.50	2.00	0.50	67	2	1	2	7
68	1.90	2.50	2.40	0.10	68	2	1	1	10
69	1.70	2.40	2.10	0.30	69	2	1	2	10
70	2.00	2.50	2.30	0.20	70	2	2	2	10
71	1.90	2.70	2.60	0.10	71	2	1	1	10
72	2.10	2.50	2.50	0.00	72	2	1	1	10
73	1.80	2.60	2.30	0.30	73	2	2	2	10
74	1.60	2.20	2.10	0.10	74	2	1	4	1
75	1.80	2.50	2.20	0.30	75	2	1	2	1
76	1.90	2.40	2.30	0.10	76	2	1	2	1
77	1.70	2.20	2.30	-0.10	77	2	1	4	4
78	1.80	2.10	2.20	-0.10	78	2	1	4	1

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Appendix 6. Mean Rating on Each of Three Criteria for Each Item and Its Subgroup Placement on Item Characteristics: Psychoeducational Proposals

Criteria					Item Characteristics							
NO	MAS	PRE-T	IN-T	DPI	NO	A	B	C	D	E	F	G
1	2.10	2.40	2.50	-0.10	1	3	1	1	7	1	1	1
2	2.10	2.10	2.60	-0.50	2	3	1	3	3	1	1	1
3	2.30	2.10	2.70	-0.60	3	3	2	3	3	1	1	1
4	1.90	2.00	2.30	-0.30	4	3	1	4	3	1	3	3
5	2.00	2.00	2.50	-0.50	5	3	1	3	4	1	3	1
6	2.40	2.50	2.80	-0.30	6	3	2	1	4	1	3	2
7	2.40	2.40	2.80	-0.40	7	3	2	1	4	1	3	2
8	2.30	2.10	2.80	-0.70	8	3	1	3	4	1	3	1
9	1.60	2.00	1.90	0.10	9	3	1	4	3	1	3	3
10	2.60	2.10	2.70	-0.60	10	3	2	3	5	1	2	2
11	2.30	2.30	2.60	-0.30	11	3	1	1	4	1	3	2
12	2.30	2.00	2.60	-0.60	12	3	2	3	2	1	3	1
13	2.50	2.00	2.60	-0.60	13	3	2	3	5	1	3	2
14	2.20	1.60	2.70	-1.10	14	3	2	3	4	1	3	2
15	2.40	2.40	2.80	-0.40	15	3	2	1	3	1	3	2
16	2.30	1.60	2.80	-1.20	16	3	2	3	5	1	3	1
17	2.60	2.40	2.30	0.10	17	3	1	2	6	2	4	2
18	2.20	2.10	2.10	0.00	18	3	1	4	8	2	4	3
19	1.60	2.10	2.20	-0.10	19	3	1	4	6	2	4	3
20	2.40	2.30	2.40	-0.10	20	3	2	1	7	2	1	1
21	2.40	1.90	2.90	-1.00	21	3	2	3	6	2	1	1
22	1.80	2.40	2.10	0.30	22	3	1	2	2	2	1	3
23	1.80	2.20	2.20	0.00	23	3	2	2	2	2	3	3
24	2.30	2.20	2.40	-0.20	24	3	1	1	6	2	1	1
25	1.80	2.30	2.00	0.30	25	3	1	2	9	2	2	2
26	2.20	2.20	2.30	-0.10	26	3	1	2	7	2	4	2
27	2.00	2.00	2.10	-0.10	27	3	1	4	9	2	2	1
28	2.10	2.00	1.90	0.10	28	3	1	4	9	2	2	3
29	2.20	2.20	2.40	-0.20	29	3	1	1	9	2	2	3
30	2.50	2.50	2.60	-0.10	30	3	2	1	1	2	2	3
31	2.00	2.20	2.50	-0.30	31	3	1	1	9	2	2	3
32	2.40	2.50	2.30	0.20	32	3	1	2	7	2	1	1
33	2.30	2.30	2.70	-0.40	33	3	2	1	10	3	1	2
34	2.10	2.10	1.80	0.30	34	3	1	4	9	3	1	2
35	2.20	2.10	2.20	-0.10	35	3	1	4	9	3	2	3
36	2.20	2.10	2.30	-0.20	36	3	1	4	9	3	1	1
37	1.80	2.10	1.70	0.40	37	3	1	4	9	3	2	3
38	1.70	2.00	1.70	0.30	38	3	1	4	9	3	2	3
39	1.80	2.20	2.00	0.20	39	3	1	2	7	3	1	3
40	2.30	2.60	2.40	0.20	40	3	1	1	8	3	4	2
41	2.60	2.60	2.50	0.10	41	3	2	1	8	3	4	2
42	2.20	2.40	2.10	0.30	42	3	1	2	8	3	4	3
43	2.30	2.60	2.30	0.30	43	3	1	2	7	3	4	1
44	2.70	2.30	2.70	-0.40	44	3	2	2	9	3	3	1
45	1.90	2.10	2.00	0.10	45	3	1	4	8	3	3	2
46	1.90	2.30	2.10	0.20	46	3	2	2	8	3	4	1
47	2.10	2.40	2.30	0.10	47	3	2	2	8	3	4	2
48	1.90	2.20	2.00	0.20	48	3	1	2	3	3	3	3

Appendix 7 Mean Item Ratings by Previous Groups Applying Criteria of Mastery and Importance: Teaching Abilities

Adv. Educ. Psychology Course Group No.	Mas.	Imp.	Sem. in Elem. Education Course Group No.	Mas.	Imp.
1	2.25	3.00	1	2.18	3.00
2	2.06	2.87	2	2.00	2.72
3	2.31	2.81	3	2.36	2.81
4	2.18	2.62	4	2.27	2.63
5	1.87	2.31	5	2.09	2.45
6	2.25	2.81	6	2.63	3.00
7	2.37	2.75	7	2.54	2.90
8	2.25	2.75	8	2.18	2.54
9	2.31	2.68	9	1.81	2.54
10	2.25	2.68	10	2.18	2.81
11	2.25	2.68	11	2.36	2.72
12	2.18	2.81	12	2.09	2.72
13	2.06	2.75	13	2.18	2.72
14	2.12	2.62	14	2.36	2.90
15	2.06	2.56	15	2.27	2.72
16	2.56	2.62	16	2.09	2.63
17	2.31	2.87	17	2.09	2.90
18	2.12	2.37	18	2.18	2.36
19	2.12	2.56	19	2.00	2.27
20	2.68	2.75	20	2.54	2.90
21	2.12	2.87	21	2.27	2.45
22	2.00	2.12	22	1.72	2.09
23	1.68	2.43	23	1.63	2.54
24	2.25	2.93	24	2.18	2.81
25	2.00	2.75	25	2.18	2.72
26	2.12	2.87	26	2.00	2.81
27	2.68	2.81	27	2.72	2.45
28	2.25	2.81	28	2.54	2.81
29	1.75	2.56	29	1.90	2.72
30	1.50	2.56	30	1.90	2.72
31	2.06	2.75	31	2.00	2.81
32	2.06	2.56	32	2.09	2.63
33	1.93	2.81	33	1.90	2.72
34	2.00	2.75	34	1.63	2.72
35	1.87	2.75	35	1.81	2.45
36	1.93	2.68	36	2.00	2.81
37	2.31	2.87	37	2.09	2.54
38	2.43	2.81	38	2.45	2.63
39	2.37	2.62	39	2.00	2.45
40	1.68	2.37	40	1.72	2.09
41	2.12	2.81	41	2.00	2.36
42	2.81	2.93	42	2.81	3.00
43	2.50	2.75	43	2.36	2.45
44	2.50	2.87	44	2.36	2.45

Appendix 8. Mean Item Ratings by Previous Groups Applying Criteria of Immediate and Long Range Need to Study: Topics in Educational Psychology

No.	Teachers in an Educ. Ps. Course				Curriculum Workers	
	Beginning		End			
	Imm. Need	L.R. Need	Imm. Need	L.R. Need	Imm. Need	L.R. Need
1	2.80	2.65	2.90	2.80	2.87	2.93
2	2.55	2.15	2.85	2.80	2.81	2.56
3	2.80	2.65	2.85	2.70	2.68	2.75
4	2.50	2.85	2.45	2.65	2.43	2.62
5	2.30	2.40	2.55	2.70	1.50	2.06
6	2.35	2.45	2.65	2.60	2.93	2.56
7	2.05	2.25	2.25	2.30	2.06	2.18
8	2.20	2.25	2.50	2.70	1.75	2.00
9	2.40	2.60	2.35	2.65	1.93	2.18
10	2.10	2.20	2.35	2.55	1.50	1.93
11	2.15	2.50	2.60	2.55	1.81	2.12
12	1.85	2.40	2.15	2.55	1.56	1.81
13	2.50	2.35	2.65	2.70	2.68	2.62
14	2.65	2.45	3.00	2.90	2.62	2.62
15	2.15	2.05	2.40	2.40	2.12	2.50
16	2.55	2.55	2.70	2.75	2.37	2.50
17	2.40	2.70	2.35	2.55	2.25	2.62
18	2.55	2.15	2.50	2.55	2.00	2.31
19	2.45	2.05	2.90	2.75	2.37	2.43
20	2.55	2.35	2.80	2.70	2.31	2.62
21	2.55	2.55	2.90	2.75	2.81	2.75
22	2.65	2.35	2.60	2.60	2.62	2.62
23	3.00	2.15	2.90	2.55	2.62	2.50
24	1.65	2.30	1.90	2.70	1.68	2.31
25	1.75	2.05	2.20	2.30	1.50	2.06
26	2.10	2.00	2.15	2.45	1.93	2.43
27	2.40	2.20	2.70	2.55	2.00	2.50
28	2.20	2.40	2.35	2.70	2.37	2.81
29	2.40	2.25	2.80	2.85	2.25	2.68
30	1.90	2.20	2.35	2.60	1.75	2.00
31	1.60	2.25	2.40	2.60	1.75	2.18
32	1.90	2.35	2.50	2.70	1.87	2.31
33	1.90	2.20	2.25	2.45	1.50	2.25
34	1.70	2.25	2.05	2.65	1.50	2.06
35	2.55	2.55	2.75	2.70	2.31	2.43
36	2.35	2.45	2.45	2.75	1.87	2.50
37	2.15	2.40	2.75	2.80	2.00	2.31
38	2.10	2.55	2.65	2.75	1.81	2.18
39	2.55	2.60	2.50	2.60	2.06	2.25

Appendix 8 (Continued)

No.	Teachers in an Educ. Ps. Course				Curriculum Workers	
	Beginning		End			
	Imm. Need	L.R. Need	Imm. Need	L.R. Need	Imm. Need	L.R. Need
40	2.65	2.50	2.50	2.60	2.43	2.43
41	2.25	2.20	2.65	2.75	1.93	2.25
42	2.25	2.35	2.45	2.60	1.87	2.25
43	2.40	2.45	2.70	2.75	2.25	2.43
44	2.65	2.70	2.90	2.90	2.18	2.56
45	2.25	2.30	2.50	2.55	2.06	2.31
46	2.50	2.45	2.65	2.65	2.06	2.25
47	2.65	2.65	2.85	2.80	2.06	2.62
48	2.75	2.90	2.75	2.95	2.43	2.68
49	2.55	2.90	2.50	2.75	2.56	2.62
50	3.00	2.70	2.95	2.90	2.81	2.62
51	2.00	2.50	2.55	2.60	1.50	2.18
52	2.25	2.65	2.85	2.70	2.00	2.37
53	2.20	2.40	2.60	2.70	1.87	2.37
54	2.20	2.65	2.65	2.85	1.81	2.37
55	1.90	2.45	2.20	2.70	1.75	2.43
56	2.20	2.05	2.40	2.45	1.62	2.06
57	2.25	2.45	2.55	2.65	1.81	2.18
58	1.90	2.10	2.60	2.65	1.68	2.06
59	2.20	2.55	2.75	2.85	2.25	2.62
60	2.60	2.90	2.85	2.90	2.62	2.81
61	2.15	2.25	2.35	2.60	1.93	2.43
62	2.15	2.40	2.55	2.55	1.81	2.37
63	2.70	2.65	2.75	2.75	2.31	2.68
64	2.55	2.65	2.60	2.60	2.43	2.62
65	2.30	2.70	2.45	2.60	2.43	2.62
66	2.05	2.35	2.50	2.60	2.06	2.31
67	2.30	2.55	2.60	2.75	2.12	2.43
68	2.15	2.60	2.60	2.70	2.18	2.43
69	2.15	2.60	2.55	2.60	1.68	2.37
70	2.15	2.70	2.55	2.55	2.18	2.43
71	2.45	2.70	2.75	2.70	2.31	2.43
72	2.50	2.80	2.50	2.65	2.06	2.43
73	2.05	2.70	2.30	2.60	1.81	2.31
74	1.55	2.40	2.15	2.55	1.43	2.12
75	2.00	2.60	2.30	2.50	1.56	2.31
76	2.00	2.65	2.15	2.65	1.81	2.56
77	1.55	2.30	1.95	2.45	1.81	2.56
78	1.70	2.30	2.00	2.55	1.75	2.31

Appendix 9. Mean Item Ratings by Previous Groups Applying Criteria of Comprehension, Importance, and Application: Psychoeducational Proposals

	Combined Teacher Group				Staff Group		
No.	Compr.	Import.	Applic.	No.	Compr.	Import.	Applic.
1	2.50	2.82	2.34	1	2.00	2.62	1.37
2	2.38	2.69	2.19	2	1.87	2.62	1.75
3	2.58	2.76	2.35	3	2.37	2.37	1.50
4	2.02	2.46	1.96	4	2.12	2.37	1.37
5	2.11	2.39	1.85	5	2.37	2.37	1.50
6	2.71	2.85	2.51	6	2.37	3.00	1.87
7	2.52	2.76	2.16	7	2.75	3.00	1.87
8	2.47	2.57	2.01	8	2.25	2.25	1.75
9	1.56	1.83	1.44	9	1.37	2.00	1.25
10	2.64	2.83	2.28	10	2.75	2.75	1.62
11	2.29	2.47	2.07	11	2.00	2.25	1.50
12	1.82	2.21	1.79	12	1.62	1.87	1.62
13	2.62	2.70	2.26	13	2.50	2.25	1.50
14	2.30	2.50	1.83	14	2.25	2.62	1.62
15	2.67	2.80	2.34	15	2.37	2.75	2.00
16	2.51	2.73	2.12	16	2.25	2.37	2.00
17	2.10	2.41	2.06	17	2.25	3.00	1.75
18	1.43	1.94	1.61	18	1.00	1.62	1.25
19	1.79	2.06	1.76	19	1.62	1.87	1.37
20	1.91	2.34	2.06	20	1.75	2.62	2.00
21	2.48	2.73	2.28	21	2.12	2.37	1.50
22	1.61	1.71	1.37	22	1.75	1.62	1.25
23	1.67	2.07	1.58	23	1.75	2.50	1.62
24	2.26	2.43	2.01	24	2.12	2.25	1.37
25	1.75	2.14	1.66	25	2.12	2.12	1.62
26	2.00	2.32	2.05	26	2.00	2.62	1.87
27	1.84	2.11	1.75	27	1.50	1.87	1.50
28	1.67	1.82	1.48	28	1.62	1.75	1.37
29	2.44	2.61	2.21	29	2.25	2.37	1.62
30	2.35	2.52	2.24	30	2.25	2.50	1.87
31	2.33	2.48	2.25	31	2.25	2.50	1.50
32	2.52	2.64	2.52	32	2.75	2.62	2.25
33	2.29	2.66	1.98	33	2.50	2.62	1.87
34	1.82	2.21	1.82	34	1.87	2.25	1.50
35	1.94	2.16	1.83	35	1.75	2.12	1.62
36	2.32	2.51	2.28	36	2.50	2.87	1.87
37	1.76	2.08	1.73	37	1.75	2.00	1.37
38	1.44	1.87	1.53	38	1.25	2.00	1.12
39	1.83	2.07	1.78	39	1.87	2.12	1.50
40	2.23	2.56	2.12	40	2.00	2.37	1.37
41	2.35	2.61	2.25	41	2.50	2.75	2.12
42	1.73	2.11	1.78	42	1.87	2.25	1.62
43	2.39	2.52	2.26	43	2.12	2.37	1.50
44	2.61	2.78	2.38	44	2.50	2.87	1.75
45	1.46	1.94	1.47	45	1.37	2.25	1.37
46	2.17	2.39	2.15	46	1.75	2.25	1.50
47	2.23	2.67	2.16	47	1.62	2.75	1.37
48	1.76	2.08	1.74	48	1.50	2.25	1.37